# SYLLABUS

**1. Course title:**

**BASICS OF MECHANICAL ENGINEERING TECHNIQUES**

**2. Code:**

**3. Cycle of study:**

**I**

**4. ECTS credits:**

**3**

**5. Type of course:**

**Elective**

**6. Prerequisites:**

**7. Class restrictions:**

**8. Duration / semester(s):**

**1** **I**

**9. Weekly contact hours and student workload:**

| | | | | | |
|---|---|---|---|---|---|
| **Semester (1)** | **1** | **Semester (2)** | | **(for two-semester courses)** | **Workload: (hours)** |
| **9.1. Lectures** | **2** | | | **Classes:** | **33.75** |
| **9.2. Seminars** | **0** | | | **Individual work:** | **52.58** |
| **9.3. Laboratory / Practice classes** | **1** | | | **In total:** | **86.33** |

**10. Faculty:**

**Mechanical Engineering**

**11. Department/study program:**

**Energy and ThermoFluidic Engineering, Production Engineering, Mechatronics**

**12. Lecturer:**

**Dr.Sc. Salko Ćosić**

**13. Course aims:**

**Acquiring basic theoretical and practical knowledge in the field of physical foundations of functioning, development, production and application of mechanical engineering elements and devices in modern engineering practice.**

## 14. Learning outcomes:

**At the end of the semester/course, successful students, who have continuously performed their duties throughout the entire teaching period, will be able to independently understand the functioning, production, and use of basic elements of mechanical engineering techniques.**

## 15. Course content:

**1. Introduction, elements of mechanical engineering, design, construction, production**
**2. CAD, CAE, CAM, basic concepts and definitions**
**3. design and construction phases, product life cycle, PLM**
**4. technical standards and regulations, basics, applications**
**5. basics of technical and technological documentation I**
**6. basics of technical and technological documentation II**
**7. SolidWorks and other CAD systems, basics, application in the preparation of documentation and construction**
**8. TEST No. 1**
**9. basic construction materials, types, characteristics, areas of application, selection principles, Part I**
**10. basic construction materials, Part II**
**11. machine elements, division by function and purpose, Part I**
**12. machine elements, Part II**
**13. basic energy processes and transformations, driving and working machines, division and principles of operation, Part I**
**14. driving and working machines, Part II**
**15. TEST No.**

## 16. Learning methods:

**Lectures and presentations with analysis of examples, problems for independent practice, laboratory exercises with program tasks, consultations with the teacher and assistant.**

## 17. Assessment methods:

**Partial knowledge tests are conducted in the middle and at the end of the semester and include a practical part (program assignments) and a theory test. A student who has achieved at least 54% of points has passed the partial knowledge test. At the final exam, the student is exempted from the part of the exam that was passed through partial tests. In order to enter a grade, it is necessary to pass both the practical and theoretical parts of the exam.**

**Rating:**
**5 (five, F,FX) <54, does not meet minimum criteria,**
**6 (six, E) 54 - 64, meets minimum criteria**
**7 (seven, D) 65 - 74, generally good, but with significant flaws,**
**8 (eight, C) 75-84, average, with noticeable flaws**
**9 (nine, B) 85 - 94, above average, with a few errors,**
**10 (ten, A) 95 - 100, outstanding achievement without errors or with minor errors**

## 18. Assessment components:

**The exam grade is based on the total number of points the student has earned by completing the pre-exam requirements and taking the exam, as follows:**

**Pre-exam requirements:**
**Partial Test I, tasks + theory: 15 + 15 = 30**
**Partial Test2, tasks + theory: 15 + 15 = 30**
**----------**
**Total pre-exam requirements: 60**
**Final exam: 40**
**Total maximum: 100**

## 19. Mandatory reading list:

**1. Verner Skolaut: "Maschinenbau, Ein Lehrbuch für das ganze Bachelor-Studium" Springer 2017 (e-book)**
**2. IP 1-3, Temelji inženjerskih znanja. Priručnik, Školska knjiga Zagreb**

## 20. Additional reading list:

## 21. Web sources:

**22. Applicable from the academic year:**

**2025/2026**

**23. Adopted in the Faculty/Academy session:**