SYLLABUS

1. Course title:

TECHNOLOGY OF PLASTICITY II

2. Code:

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

Mandatory

6. Prerequisites:

7. Class restrictions:

8. Duration / semester(s):

1 | 6

9. Weekly contact hours and student workload:

Semester (1)	6	Semester (2)		(for two-semester courses)	Workload: (hours)
9.1. Lectures	3			Classes:	56,3
9.2. Seminars	1			Individual work:	119.1
9.3. Laboratory / Practice classes	1			In total:	175.4

10. Faculty:

Faculty of Mechanical Engineering Tuzla

11. Department/study program:

Manufacturing Mechanical Engineering

12. Lecturer:

prof. Emir Šarić, PhD

13. Course aims:

It is to understand various manufacturing techniques, the underlying principles and be capable to design technology and tools for blanking, fine blanking, extrusion, drawing, deep drawing, bending processes

14. Learning outcomes:

On successful completion of this module students will gain knowledge and skills an will be able to:
- Classify the metal working processes
- Explain principle of flat rolling, determination of rolling load and parameters effects on sheet properties
- Describe the extrusion, drawing and forging operation and analyze related deformations, stresses, forces and work
- Describe the blanking, fine blanking, bending deep drawing and press forming operation and analyze related deformations, stresses, forces and work

15. Course content:

1. Introduction, Comparative technologies,
2-3. Flat Rolling,
4-5. Blanking and Fine Blanking,
6-7. Bending and Roll-bending,
8. First part Review and Midterm Exam
9-10. Deep Drawing and Press Forming,
11. Ironing,
12. Extrusion,
13. Hydroforming,
14. Unconventional Forming Processes,
15. Finite Element Method in Metal Forming, Second Part Exam

16. Learning methods:

Lecture and Discussions: voice and Power point lecture notes
Practice: Numerical examples and homework handout problems
Consultations
Seminar paper - summarized in report

17. Assessment methods:

• Lectures – theoretical lectures, active two-way communication between student and professor, compulsory attendance of students;
• Theory tests - solving tests;
• Tests with tasks - solving tests;
• Seminar/graphic works – independent work of the student to solve the problem;
• Oral final exam - interactive conversation with the student in order to validate the acquired knowledge;
• Consultations – clarification of any ambiguities related to the topic of the studied subject.

The condition for signing is the student's attendance at a minimum of 70% of lectures and exercises.
Grading Scale:

Grade	Descriptive	Letter	Points
5 (five)	Does not meet minimum criteria	F, FX	<54
6 (six)	Meets minimum criteria	E	54÷64
7 (seven)	Generally good, but with significant shortcomings	D	65÷74
8 (eight)	Average, with noticeable errors	C	75÷84
9 (nine)	Above average, with occasional errors	B	85÷94
10 (ten)	Exceptional success with no errors or with minor errors	A	95÷100.

18. Assessment components:

Individual and group activities 20 bod.
Semestral work 30 bod.
Written and/or oral exam 50 bod,
Total 100 bod.

19. Mandatory reading list:

1. **E: Šarić, S. Butković: Izvodi iz teorije plastičnosti metala, Tuzla, 2021**
2. **W. F. HOSFORD, R. M. CADDELL: Metal Forming Mechanics and Metallurgy, Cambridge University Press, 2007**

20. Additional reading list:

1. **B.Musafija: Obrada metala plastičnom deformacjom, MF Sarajevo**
2. **H.Đukić, M.Nožić: Obrada Deformisanjem, MF Mostar, 2013**

21. Web sources:

22. Applicable from the academic year:

2025/2026

23. Adopted in the Faculty/Academy session:

25.04.2025