SYLLABUS

1. Course title:

MANUFACTURING TECHNOLOGIES II

2. Code:

3. Cycle of study:

1

4. ECTS credits:

5

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)	Semester (2)	(for two-semester courses)	Workload: (hours)	
9.1. Lectures	3			Classes:	45
9.2. Seminars	1			Individual work:	98,5
9.3. Laboratory/Practice classes	0			In total:	143,5

10. Faculty:

Faculty of Mechanical Engineering Tuzla

11. Department/study program:

Mechatronic

12. Lecturer:

Dr.sc. Samir Butković,professor

13. Course aims:

Acquiring basic knowledge in manufacturing technologies, fundamental principles, as well as better understanding of interaction between material and manufacturing technology.

14. Learning outcomes:

After completing this course students are able to participate in solving practical problems in following fields: welding, casting, forming, powder metallurgy. Also, students are able to select optimal manufacturing technology for required product properties.

15. Course content:

1. Introduction to forming processes,
2. Rolling, Extrusion, Forging, Blanking, Fine Blanking,
3. Bending, Roll-bending, Deep Drawing, Classification of press tools,
4. Types and Role of tooling in the deformation system, Types of presses.
5. Introduction and welding processes classification, Heat sources for welding,
6. Welding metallurgy, Weldability of steel,
7. Test I, Preheating,
8. Welding processes,
9. Welding Processes,
10. Introduction in casting and Casting metallurgy,
11. Classification of casting processes,
12. Introduction in powder pressing technologies, Conventional pressing, Warm compaction,
13. Hot isostatic pressing, Metal injection molding,
14. Introduction to sintering,
15 Test II

16. Learning methods:

Lectures with active participation of students,
Exercises,
Consultations,
Preparation and presentation of seminar papers.

17. Assessment methods:

Activity during lectures,
2 tests (solving of tasks),
2 test (understanding of theory)
Seminar/homework papers,
Final exam,

Knowledge tests results are recognized as cumulative result if achieved results are positive after each individual exam and gives at least 50% of the planned and/or the necessary knowledge and skills. In order to pass the subject the student must achieve a minimum of 54 cumulative points.

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:

Attendance and activity during lectures, 6 points
2 tests (solving of tasks), 2 tests x 10 points=20 points
2 test (understanding of theory), 2 tests x 12 points=24 points
Seminar/homework papers, 10 points
Final exam, 40 points

19. Mandatory reading list:

1. B. Samir, E. Šarić, M. Mehmedović: Tehnologije presanja i sinterovanja metalnih prahova, Tuzla 2021.
2. Šarić E, Butković S. Izvod iz teorije plastičnosti metala. Tuzla: In Scan d.o.o Tuzla; 2021.
3. O. Pašić, Zavarivanje, Sarajevo 1998.godina,
4. J. Chakrabarty, Theory of Plasticity, 2nd edition, McGraw Hill Pub. 1998.

20. Additional reading list:

1. Sindo Kou, Welding metallurgy, New Jersey, 2003.

21. Web sources:

22. Applicable from the academic year:

23. Adopted in the Faculty/Academy session: