SYLLABUS

1. Course title:

Simulation of the production process

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester(s):

1 | 8

9. Weekly contact hours and student workload:

Semester (1)	2	Semester (2)		(for two-semester courses)	Workload: (hours)
9.1. Lectures	0			Classes:	22,5
9.2. Seminars	0			Individual work:	66,7
9.3. Laboratory / Practice classes				In total:	89,2

10. Faculty:

Faculty of Mechanical Engineering Tuzla

11. Department/study program:

Manufacturing Mechanical Engineering

12. Lecturer:

Dr. sc. Edin Cerjaković, van.prof.

13. Course aims:

The primary goal of the course simulation the production process is to introduce students to the techniques of modeling and simulation of the production process. A special aspect of the course is dedicated to the issue of finding organizational solutions of production which will be designed to maintain and increase the competitiveness of the production system,

where the student try to set an active player in considering and addressing these problems through active participation in the presentation and discussion of matter and making example.

14. Learning outcomes:

Bearing in mind that the case be listening to the first cycle of education in the final semester, students will successfully after the coursework exams have the competence to: perform modeling the production process, analyze the production process,
provide conclusions on improving the production process, the application of the concept of the digital factory.

15. Course content:

1. Interduction (2)
2. Modeling (2)
3. Modeling methods (2)
4. General rules for modeling (2)
5. General rules for modeling (2)
6. Simulation (2)
7. Discrete event simulation (2)
8. Digital factory (2)
9. Digital factory (2)
10. Digital factory (2)
11. The simulation of production processes (2)
12. The simulation of production processes (2)
13. The simulation of production processes (2)
14. The simulation of the assembly processes (2)
15. The simulation of the assembly processes (2)

16. Learning methods:

In order to effectively deliver the course and achieve the set course objectives and student competencies, the following methods will be used during the course:
• lectures,
• laboratory exercises,
• individual and team/group work,
• presentation in a real environment..

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 possible 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:

1. Attendance at lectures (30×0.5=15)
2. Seminar work (1×20=20)
3. Theory test (2 tests - 2×15=30)
4. Final exam (35)
By continuous activities of checking the student's knowledge during the semester (sequential number: 1, 2 and 3), the student can win 65% of the total number of points, and by passing the final exam another 35% of the total number of points.

19. Mandatory reading list:

1. E.Cerjakovic (2024): Predavanja iz predmeta Simulacija procesa proizvodnje, Mašinski fakultet, Tuzla
2. Kühn W.: Digitale Fabrik: Fabriksimulation für Produktionsplaner, Carl Hanser Verlag, Munchen

20. Additional reading list:

1. Čerić, V.: Simulacijsko modeliranje, Školska knjiga, Zagreb

21. Web sources:

22. Applicable from the academic year:

2025/2026

23. Adopted in the Faculty/Academy session:

25.04.2025