SYLLABUS

1. Course title:

Transportation equipment and devices

2. Code:

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3. Cycle of study:

I

4. ECTS credits:

3

5. Type of course:

Elective

6. Prerequisites:

None

7. Class restrictions:

None

8. Duration / semester(s):

I **VI**

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)	
9.1. Lectures	2			Classes:	33.75
9.2. Seminars	0			Individual work:	55.54
9.3. Laboratory / Practice classes	1			In total:	89.29

10. Faculty:

Faculty of Mechanical Engineering in Tuzla

11. Department/study program:

Energy and Thermo-Fluid Engineering

12. Lecturer:

Dr. Alan Topčić, Full Professor

13. Course aims:

Understanding transportation systems and devices used for material handling, primarily related to applications in the energy sector, as well as acquiring the necessary theoretical and practical skills in the field in order to independently select, dimension, and design transportation systems and devices.

14. Learning outcomes:

By the end of the semester/course, successful students who have continuously fulfilled their obligations throughout the entire instructional period will be able to: identify and classify transportation systems and devices within the transport system; quantify the impact of the transported material on the structural characteristics of transportation systems and devices; calculate and design the structural and technical-technological parameters of transportation systems and devices.

15. Course content:

The course will be delivered in accordance with the syllabus, covering the instructional units following the weekly schedule throughout the semester.
1. Introductory lecture – Basic principles of material transportation
2. Types of transported materials
3. Areas of application of transportation systems
4. Types of drives for transportation devices
5. Components of transportation systems and devices
6. Load-lifting mechanisms
7. Transport machines in the energy and mining sectors
8. First continuous knowledge assessment (theoretical questions and exercises)
9. Belt conveyors and bucket elevators
10. Road and rail transportation systems
11. Industrial vehicles
12. Cranes and hoists
13. Elevators and cableways
14. Hydraulic and pneumatic transport
15. Second continuous knowledge assessment (theoretical questions and exercises)

16. Learning methods:

Theoretical lectures (TL) using multimedia tools, chalk and blackboard, and various video recordings; Application of proactive learning techniques; Seminar paper TL (independent description of specific topics and problem-solving related to the subject matter); Consultations - clarification of any uncertainties related to the subject material; Laboratory exercises (LE) – solving problems with tasks, working in the laboratory and on-site with the goal of mastering the subject matter, active two-way communication student – collaborator; Preparation of the Laboratory Report.

17. Assessment methods:

The requirement for signing the student's index is attendance at 70% of lectures:
• Defense of the seminar paper (submitted seminar paper + answering questions posed),
• Two continuous knowledge assessments (from the theoretical part and exercises) – the student solves given questions/tasks within the allotted time related to the subject matter,
• Laboratory report – independent work of the student in solving practical problems under the supervision of the collaborator,
• Final, Resit, and Additional Resit exams (oral or written exam),

Grading system: pre-exam obligations 70 points + final exam 30 points = TOTAL 100 points

Grade	Description	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)	Excellent performance with no or negligible errors	A	95 – 100

18. Assessment components:

Grading will be based on the following activities:
1. Attendance at lectures: 22.5 points
2. Defense of the seminar paper: 4 points
3. Continuous knowledge assessment during the semester (theory): 2x8 = 16 points
4. Continuous knowledge assessment during the semester (exercises): 2x5 = 10 points
5. Attendance at laboratory exercises: 7.5 points
6. Laboratory report: 10 points

Total pre-exam obligations: 70 points

7. Final exam (oral or written): 30 points

TOTAL: 100 POINTS

19. Mandatory reading list:

1. Tosic S.: Calculation of Continuous Transport Machines and Lifting Devices, Faculty of Mechanical Engineering, Belgrade, 2001.
2. Dedijer S.: Fundamentals of Transport Devices, Belgrade, 2001.

20. Additional reading list:

1. Vladić J.: Transportation and Handling Equipment and Devices, Novi Sad, 2005.

21. Web sources:

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22. Applicable from the academic year:

2025./2026.

23. Adopted in the Faculty/Academy session:

April 2025