



UNDERGRADUATE STUDY: **LOGISTICS**

SEMESTER (II)

Syllabus

Academic year 2025/2026

Course: Container Transport						
Head of course: Assoc. Prof. Tomislav Rožić , Ph. D.						
Co-lecturers:						
Semester: II.	Course code: 272762	Lectures: 30	Auditory exercises: 0	Laboratory exercises: 30	Seminars: 0	ECTS credits: 4
Group for lectures: 15 students			Group for auditory and laboratory exercises: 15 students			

Objective of the course:

- Provide knowledge, skills and information necessary for understanding container transport technology.
- Provide approaches, methods and procedures for individual cargo transportation by containers.

Course enrolment requirements:

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Learning outcomes:

1. State the basic terms of container transport.
2. Evaluate the key indicators of container transport flows.
3. Clarify the technical characteristics of certain types of containers.
4. Identify the general conditions for handling certain types of containers.
5. Evaluate appropriate cost models of container transport.
6. Calculate the required number of equipment and the required area for container storage at the container terminal.

**LECTURES, EXERCISES and SEMINARS**

Week	Syllabus	Form of classes	Performed by	Lessons	Remark
1.	Introduction to the course, basic terminology on containerized cargo transportation	L	Tomislav Rožić		
	Introduction to laboratory exercises	LE	Tomislav Rožić		
2.	Key indicators of container cargo flows	L	Tomislav Rožić		
	Planning the stacking of cargo in containers in accordance with legal regulations, cargo possibilities and the requirements of the shipping company	LE	Tomislav Rožić		
3.	General container handling conditions and structural parts of standardized ISO containers	L	Tomislav Rožić		
	Calculate the costs of container vessels, cargo transportation and transshipment	LE	Tomislav Rožić		
4.	Classification of containers according to its purpose	L	Tomislav Rožić		
	Calculate the required number of equipment at container terminal apron area	LE	Tomislav Rožić		
5.	Manipulation equipment for containers transshipment	L	Tomislav Rožić		



	Calculate the required number of equipment at container terminal railway yard	LE	Tomislav Rožić		
6.	Methods of stacking and securing cargo in containers	L	Tomislav Rožić		
	Calculate the required areas for container storage at container terminal	LE	Tomislav Rožić		
7.	Causes and types of containers damage	L	Tomislav Rožić		
	Calculate the required number of equipment at the container storage yard	LE	Tomislav Rožić		
8.	Methods of transporting other (liquid, dangerous, oversized...) cargo in containers	L	Tomislav Rožić		
	Calculate the service time of container vessels in ports	LE	Tomislav Rožić		
9.	Criteria for determining the location of container storage	L	Tomislav Rožić		
	Calculate terminal working hours based on terminal traffic	LE	Tomislav Rožić		
10.	Key performance indicators (KPI) in strategic planning and management of container terminals	L	Tomislav Rožić		



	Determining the required length of apron area	LE	Tomislav Rožić		
11.	Concepts of management and connection of the port hinterland	L	Tomislav Rožić		
	Application of quality indicators to the functioning of container terminals	LE	Tomislav Rožić		
12.	Defining the necessary equipment, areas and capacity for container storage at container terminal	L	Tomislav Rožić		
	Application of virtual reality in the management of quay cranes	LE	Tomislav Rožić		
13.	Application of virtual reality in the presentation of technological processes at container terminal	L	Tomislav Rožić		
	Application of virtual reality in the management of port equipment at container terminal railway yard	LE	Tomislav Rožić		
14.	Operation processes of the container terminal - an example	L	Tomislav Rožić		
	Application of virtual reality in the management of equipment at the container storage yard	LE	Tomislav Rožić		
15.	Final lecture and summary of acquired knowledge	L	Tomislav Rožić		
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Department of Transport Logistics



UNIVERSITY OF ZAGREB
FACULTY OF TRANSPORT AND TRAFFIC SCIENCES

L = Lectures; **AE** = Auditory Exercises; **LE** = Laboratory Exercises; **S** = Seminars



STUDENT OBLIGATIONS AND EXAMS

Conditions for obtaining signatures:

For student to achieve the course status as a taken, a student must attend at least 70% of the lectures and 70% of the laboratory exercises.

Written Examination:

There are two ways of passing the exam:

The written test is carried out in two ways:

1. In two parts via a preliminary exams: the first preliminary exam is held in the middle of the semester, and the second at the end of the semester. The number of points that a student can obtain in one preliminary exam is 40. Students who obtain less than 20 points per preliminary exam have not passed the preliminary exam, and the points for the written test will need to be obtained at the final written part of the exam. Students who score less than 40 on both preliminary exams have not passed the written part of the exam. The first preliminary exam can be taken by all students who regularly attend classes (min. 70%). Students who have passed the first preliminary exam can take the second preliminary exam. The preliminary exam consist of theoretical questions. The student is exempted from the written part of the exam according to the following grading criteria: 40-50 points (sufficient – 2); 51-60 points (good – 3); 61-70 points (very good – 4) and 71-80 points (excellent – 5). The oral part of the exam is mandatory for all students.
2. In one part through the written final exam: 80 points can be obtained on the written exam. Students who score less than 40 have not passed the written part of the exam. All students who did not collect a sufficient number of points individually in the colloquia or are not satisfied with the points collected in the preliminary exam or did not attend the written test of knowledge through the preliminary exam take the written part of the exam.

To attend the oral part of the exam, it is necessary to obtain a minimum of 40 points, either through two preliminary exams or a written exam, with the obligation to attend classes and laboratory exercises.

Oral examination:



LITERATURE

a) Obligatory literature:

1. Vranić D, Kos S. Morska kontejnerska transportna tehnologija I. Rijeka: Pomorski fakultet u Rijeci; 2008.
2. Vranić D, Kos S. Morska kontejnerska transportna tehnologija II. Rijeka: Pomorski fakultet u Rijeci; 2006.

b) Recommended literature:

1. Rodrigue JP. The Geography of Transport Systems. Fifth Edition, London: Routledge, 2020. ISBN: 978-0-367-36463-2. <https://doi.org/10.4324/9780429346323>.
2. Van Dokkum K, Ten Katen H, Koomen K, Pinkster J. Ship Stability. 8th Edition, Dokmar: Dokmar Maritime Publisher EV; 2018
3. Meisel F. Seaside Operations Planning in Container Terminals, Halle: Martin Luther Universität Halle Wittenberg Juristische und Wirtschaftswissenschaftliche Fak; 2008.
4. Wei Yim Yap. Container Shipping Services and their Impact on Container Port Competitiveness. Brussels: UPA University Press Antwerp; 2009.
5. Kap Hwan Kim, Hans-Otto Gunther. Container Terminals and Cargo Systems. Heidelberg: 2010.
6. Container Handbook. Transport and Loss prevention Department Wilhelmstraße 43/43 G D-10117 Berlin, 2009.

METHODOLOGY OF THE IMPLEMENTATION OF THE COURSE PLAN

1. LECTURES

2. AUDITORY EXERCISES

3. LABORATORY EXERCISES

4. SEMINAR

Note: Individual and/or group viewing negative written test

**5. DOCUMENTATION****6. SCORING SYSTEM****Table 1** The scoring system for the monitoring of students and explained credit values in ECTS credits

no	Segment:		Required credits to be achieved:		Remark:	ECTS credits
			Min.	Max.		
1.	Presence at the lectures		0	10		1,5
2.	Presence at the exercises (auditory and laboratory)		0	10		1
3.	Seminar					
4.	First colloquium	= Written exam	0	10		0,5
5.	Second colloquium		0	10		0,5
6.	Oral exam		0	10		1
Σ	Overall points:			50	Overall ECTS points:	4

*During the course the student is evaluated based on the sum of the internal points earned through participating in class (lectures and exercises) and grading the seminar work. The student, in order to realize the condition "courses requirements achieved", must achieve a minimum of 25 points.



Table 2 - Explanation of the credit values in evaluations

CREDITS:	Estimate based on attendance, seminar paper and two colloquies (or written exam) - [4 ECTS] *:	The final score [4 ECTS] *:
	Sufficient (2)	
	Good (3)	
	Very good (4)	
	Excellent (5)	

Information for students (scoring system, implementation plan, learning outcomes, syllabus, literature, consulting teachers, announcement of results of examinations or colloquium, and all other information):

- <https://moodle.srce.hr/2025-2026/> (<https://merlin.srce.hr>)
- <http://www.fpz.unizg.hr/isvu/2025-en/>

Student assistants: