

## DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Reloading Devices				
Head of course	MSc Dorotea Žic, Lecturer				
Study programme	Professional undergraduate study Road Transport/ Railroad Transport				
Status of a course	Obligatory				
Year of study	2.	Semester	III	ECTS credits	5
Teaching plan (L + E + S+ Pr)	2+1+1+0				
Goals of a course					
<p>The aim of the course is to familiarize students with the performance, the construction method, the application areas and the advantages and disadvantages of each transshipment machinery with continuous and intermittent operation. It is also the goal of lectures and exercises to familiarize students with the budget methods of essential exploitation quantities, as well as with the calculation of the productivity of individual means with continuous and intermittent activity so that the technical and exploitation conditions are met.</p> <p>The aim of the exercises is to solve problems in order to enable students to acquire basic concepts, to encourage them to solve problems independently, and to acquire knowledge and skills of calculating the impact of funds with continuous and intermittent activities important for their later work in transshipment practice.</p>					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
Name of the study program: Road transport					
<p>Outcome 1: Use mathematical and statistical methods in traffic engineering and traffic research.</p> <p>Outcome 3: Use standards that cover the subject area when designing transport projects and implementing technological and service processes in the field of road transport.</p> <p>Outcome 9: Link engineering principles and technical principles in transport systems.</p> <p>Outcome 10: Assess models of exploitation and maintenance of technical equipment in the transport system.</p> <p>Outcome 13: Apply measures for managing technological processes in road transport.</p> <p>Outcome 14: Independently present professional content on oral, written and graphical basis using the usual tools in Croatian and/or foreign language</p>					
Name of the study program: Railroad transport					
<p>Outcome 1: Use mathematical and statistical methods in traffic engineering and traffic research.</p> <p>Outcome 3: Use standards that cover the subject area when designing transport projects and implementing technological and service processes in the field of railroad transport.</p> <p>Outcome 9: Link engineering principles and technical principles in transport systems.</p> <p>Outcome 10: Assess models of exploitation and maintenance of technical equipment in the transport system.</p> <p>Outcome 13: Apply measures for managing technological processes in railroad transport.</p> <p>Outcome 14: Independently present professional content on oral, written and graphical basis using the usual tools in Croatian and/or foreign language.</p>					
Expected learning outcomes on a level of a course					
<p>1. Describe the basic concepts and divisions of goods and resources with continuous and periodical activity in the field of transport.</p> <p>2. Explain the function, scale of application and reliability of operation, as well as the real effects of belt conveyors.</p> <p>3. Explain the application and reliability of operation, as well as the real effects of the remaining resources with continuous activity.</p> <p>4. Explain the application and operation, as well as the real effects of resources with periodical activity.</p>					

5. Explain the problems of use and the current situation and future development of the transshipment and transport capacities in transport companies.

### Content of a course

Basics of transshipment mechanization: place and role of transshipment mechanisation, classification and physical-technical features of goods, classification of transshipment mechanization, effectiveness of means of transshipment. Conveyors – basic forms, building elements, budget belt conveyors, roller conveyors, scraping conveyors, screw conveyors, gravity conveyors, pneumatic conveyors, vibrating conveyors, hydraulic conveyor. Derricks operating permanently – elevators. Conveyors.

Transshipment mechanization with sporadic operation and its effects, classification and efficiency. Derricks: basic parameters and machine category. Derrick elements; classification, purpose, durability and budget: cords and wire ropes, wire and plastic bands, chains, hooks, clevis fastener, beams and pliers. Electromagnetic, pneumatic and fork-like grabbers: building elements and purpose. A grab: types and building elements. Chain lockers and drums: types and application. Blocks: types, application, purpose. Stoppers: types and application. Brakes: types, building elements and budget. Wheels: types and budget. Drive of transshipment vehicles. Small and large derricks: types, building elements, application and budget. Universal hand-operated vehicles: types and application. Fork lifts and loaders: types, building elements and budget. Small haul vehicles and trailers: types. Robots. Pallets and containers; types, application, budget.

<b>Teaching modes</b>	<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> individual assignments
	<input type="checkbox"/> auditory exercises	<input type="checkbox"/> multimedia and network
	<input checked="" type="checkbox"/> seminars and workshops	<input type="checkbox"/> laboratory
	<input type="checkbox"/> distance learning	<input type="checkbox"/> supervisor's work
	<input type="checkbox"/> field classes	<input type="checkbox"/> other _____
<b>Comments</b>	Exposed course material is determined through lectures, exercises, seminars, answers to exam questions as brief knowledge tests and discussions in dynamic interaction between professor and student.	

### Students' obligations

Meet the obligations prescribed in the Study Regulations and the Regulations on the assessment of students

### Grading, evaluation and monitoring of students' work continuously during lectures and exams

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

#### Continuous check-up:

Outcomes	Pre-exam I	Pre-exam 2	Seminar work	Home assignment	Test	Threshold	Max
Outcome 1				2%	10%	6%	12%
Outcome 2	30%			2%		16%	32%
Outcome 3		28%		2%		15%	30%
Outcome 4		10%		2%		6%	12%
Outcome 5			12%	2%		7%	14%
Percentage of ECTS	1,5	1,9	0,6	0,5	0,5	-	-
Total	30%	38%	12%	10%	10%	50%	100%

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

#### Exam term:

Outcomes	Written exam	Oral exam	Max
Outcome 1	4%	2%	6%
Outcome 2	30%	6%	36%

<b>Outcome 3</b>	<b>30%</b>	<b>6%</b>	<b>36%</b>
<b>Outcome 4</b>	<b>14%</b>	<b>2%</b>	<b>16%</b>
<b>Outcome 5</b>	<b>4%</b>	<b>2%</b>	<b>6%</b>
<b>Percentage of ECTS</b>	<b>4,1</b>	<b>0,9</b>	<b>-</b>
<b>Total</b>	<b>82%</b>	<b>18%</b>	<b>100%</b>

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

#### **Grading:**

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

<b>Range of credits (percentages)</b>	<b>Numerical grade</b>	<b>ECTS grade</b>
<b>90,00 – 100,00</b>	Excellent (5)	A
<b>75,00 – 89,99</b>	Very good (4)	B
<b>60,00 – 74,99</b>	Good (3)	C
<b>50,00 – 59,99</b>	Sufficient (2)	D
<b>0,00 – 49,99</b>	Insufficient (1)	F

#### **Obligatory literature**

1. Mavrin, I.: **Transporteri**, Fakultet prometnih znanosti, Zagreb, 1999.
2. Bonjoli, Bognolo, D., Kršulja, M. : **Prekrcajna sredstva - Zbirka riješenih zadataka**, Rijeka: Futura d. o. o. Rijeka, 2017.
3. Dundović Č.: **Prekrcajna sredstva prekidnog transporta**, Sveučilište u Rijeci, Pomorski fakultet u Rijeci, Rijeka, 2005, ISBN 953-165-033-0.
4. Korman T.: **Vježbe proračun transportera s beskonačnom trakom**, Sveučilište u Zagrebu, Rudarsko-Geološko-Naftni fakultet, 2014.

#### **Additional literature**

1. Linarić Z., **Učinak standardnih građevinskih strojeva za zemljane radove**, Građevni godišnjak 96, 601-632, Zagreb 1996.
2. Miloš, I.: **Tehnologija i organizacija intermodalnog prometa**, Rijeka, ISBN 953-6911-56-1. 2011.
3. Ljubetić, J.: **Prekrcajna sredstva I, Zbirka slika i tablica**, Veleučilište u Rijeci, 2002.
4. Suvajdžić, Slavko: **Mehanizacija pretovarno – transportnih naprava**, Građevinska knjiga, Beograd, 1973.
5. Proizvodno strojarstvo - Priručnik II. (2002) **Organizacija proizvodnje - Priručnik IP4** - Zagreb, Školska knjiga, ISBN 953-0-31682-8.
6. Šćap D.: **Prenosila i dizala podloga za konstrukciju i proračun**; Sveučilište u Zagrebu - Fakultet strojarstva i brodogradnje, Liber, Zagreb 1990.

