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## **POLYTECHNIC OF ŠIBENIK**

### DEPARTMENT OF TRAFFIC

#### PROFESSIONAL UNDERGRADUATE STUDY OF TRAFFIC

# Erasmus+ Course Catalogue Academic year 2020-2021

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Head of department Darijo Šego, M.Eng., s.lec.

Šibenik, April 2020

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Graphic communications
Statistics in traffic
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Operational research in traffic
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Theory of vehicle movement

#### **Course list**

Professor	Component code	Course	ECTS
Olivari Luka	129836	Graphic communication	5
Perišić Ana		Statistics in traffic	4
Šego Darijo	140771	Traffic corridors and merchandise flows	4
Ljubić Hinić Martina	201139	Technology and organization of road traffic	7
Kardum Goleš Ivana	129833	English language I	3
Kardum Goleš Ivana	140775	English language III	3
Gaćina Nikolina	187586	Knowledge of goods	4
Poljičak Ana-Mari	142664	Traffic in tourism	3
Ljubić Hinić Martina	129846	Modern traffic systems	6
Radić Lakoš Tanja	129843	Traffic and ecology	4
Šego Darijo	140773	Traffic logistic	4
Poljičak Ana-Mari	140767	Transshipment resources	6
Mečev Dijana	142541	Economics of traffic	3
Beljo Ivana	140769	Operational research in traffic	4
Kardum Goleš Ivana	187599	English language II	3
Kardum Goleš Ivana	140784	English language IV	3
Olivari Luka	142538	Theory of vehicle movement	4

#### **Full Course Curriculums**

1. GENERAL INFORM	ATION					
1.1. Course lecturer	Luka Olivari	1.8. Course code in ISVU	129836			
1.2. Course title	Graphic communications	1.9. Course code in MOZVAG				
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+30+0+0)			
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> , course materials are on-line, 0%			
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4			
1.6. Year of study	1 <sup>st</sup>	1.13. Modernization	Yes			
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20%XMore than 20 %□			
2. COURSE DESCRIP						
2.1. Course objectives	• Gain the knowledge and skills necessary to read, u	chnical drawings, orthogonal projections, spatial rendering and	cross sections.			
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualifica	ation level 4.2 according to the CROQF.				
2.3. Learning outcomes on the study programme level	on the study programme LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process					
2.4. Expected learning outcomes on the course	Learning outcomes by Bloom: (maximum 2 werbs	Level of LO: 1 - memory, 2 - understanding,				

level (4-10 learning outcomes)	1. Describe the basic concepts in graphical communication         2. Draw orthogonal projections based on the given isometric view         3. Design an isometric representation of the body based on the given orthogonal projections         4. Distinguish the rules of technical presentation and apply them to the technical drawing.         5. Draw a technical drawing in the AutoCAD computer program.							
2.5. Course content according to detailed curriculum schedule	5. Draw a technical drawing in the AutoCAD computer program.       4         Constructive allignement							
	No	Thematic unit	LO of the course	Content/teaching methods	Evalu	ation	Time	
	1.	Introductory presentation (introducing students to the content and obligations of the course). The importance of graphical communications. Short history and development of graphic communications	1	Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning course page.	At the colloquium oral exam they defi basic concepts.		4 h	
	2.	Technical letter, line types and widths, paper formats, scale and components of the technical drawing.	1, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical display. Independent exercise.	At the colloquium oral exam: define an concepts; distinguish of the technical layou the technical drawing	nd explain the basic in between the rules it and apply them to	4 h	
	3.	Fundamentals of geometric structures.	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium oral exam: define an concepts; draw orth based on a giver	nd explain the basic nogonal projections	4 h	

	Technical spatial sketching and construction. Orthogonal projections. European and		Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation.	<ul><li>distinguish between the rules of the technical layout and apply them to the technical drawing;</li><li>At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections</li></ul>	
4.	American display mode.	1, 2, 3	Independent exercise.	based on a given isometric view; form an isometric representation of the body based on given orthogonal projections;	4 h
5.	Display rules in technical drawings. Applying measures.	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing;	4 h
6.	Markings on the technical drawing (marks of machining, roughness, tolerances of dimensions and shape)	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing;	4 h
7.	Cross sections and rules for screwing.	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing;	4 h

Spatial presentation	n	Listen to a lecture and read literature.	At the colloquium or the written and	
8.	1, 3, 4	The exercises demonstrate the rules of technical presentation. Independent exercise.	At the conoquium of the written and oral exam: define and explain the basic concepts; form an isometric representation of the body based on given orthogonal projections; distinguish between the rules of the technical view and apply them to the technical drawing.	4 h
9. Introduction to Con Aided Design. CAl systems. Software and scope.	D / CAM packages 1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h
Special markings of drawings and simp Details on technica10.AutoCAD, interface commands.	lifications. Il drawings. ee and basic 1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h
AutoCAD, comma drawing, using and new layer.11.	creating a 1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h
<b>12.</b> AutoCAD, comma	nds for 1, 4, 5	Listen to a lecture and read literature.	At the colloquium or the written and	4 h

		applying measures, creating	7 a	The exercises demo	onstrate the rules	oral exam: define and explain the basic	
		template, printing drawings	-	of technical	presentation.	concepts; distinguish between the rules	
		······································		Independent exercise		of the technical layout and apply them to	
						the technical drawing; draw a technical	
						drawing in an AutoCAD computer	
						program.	
		AutoCAD, creation and		Listen to a lecture an	nd read literature.	At the colloquium or the written and	
		manipulation of objects.		The exercises demo	onstrate the rules	oral exam: define and explain the basic	
				of technical	presentation.	concepts; distinguish between the rules	
	13.		1, 4, 5	Independent exercise	e.	of the technical layout and apply them to	4 h
				-		the technical drawing; draw a technical	
						drawing in an AutoCAD computer	
						program.	
		AutoCAD, self-made		Listen to a lecture an	nd read literature.	At the colloquium or the written and	
		workshop drawing.		The exercises demo	onstrate the rules	oral exam: define and explain the basic	
				of technical	presentation.	concepts; distinguish between the rules	
	14.		1, 4, 5	Independent exercise	e.	of the technical layout and apply them to	4 h
						the technical drawing; draw a technical	
						drawing in an AutoCAD computer	
						program.	
		Final consideration, repeti	tion	Listen to a lecture an	nd read literature.	-	
	15.	and preparation for the example	-	They prepare indi-	vidually for the		4 h
		and preparation for the example		exam.			
3. EVALUATION OF	STUD	ENT WORK					
	In ac	cordance with the Rulebook	on Study and the	e Rulebook on Assessi	nent and Evaluation	on of Student Performance: Full-time stude	ents are
2.1. Student abligation	requi	red to attend classes at least	70%, which is al	so a requirement for o	btaining the lecture	er's signature. Students can take the final e	exam in
3.1. Student obligations	the c	ourse in two ways: a) during	g the course, by	taking colloquiums an	d oral part of the	exam; b) passing the written and oral part	t of the
	exam	l.					
3.2. Student work		nding classes 2		Written exam	2 (without	Project	

share of ECTS credits for	Experimental work		Research			Practical work		
each activity so that the	Essay		Report			Continuous check		
total number of ECTS credits corresponds to the	Colloquiums	2 (without written exam)	Seminar paper			Field works or Study trips		
course credit value)	Teaching activities		The oral part of exam	1		(other)		
	Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or st hours), preparation of seminar work and presentation (30 hours).         Obligation       Hours (estimated)					vork or study trips (30		
3.3. Student work-load	1. Attending classes	1. Attending classes				60		
	· ·	l written exam individua			30			
		l written exam individua	al preparation (AutoCA	D)	30			
	4. Oral exam indivi	dual preparation			30			

#### 4. FORMATION OF STUDENT GRADE

	Elements of evaluation	Bad	Satisfying	Above average
	Technical drawing	Drawing incomplete, imprecise and	Drawing neatly crafted with a small	Drawing very neatly made without
		sloppy. Made on inadequate paper	number of imprecise errors, a clear	errors.
		size.	distinction between types of lines.	
	Distinguish and apply	Does not know the rules, does not	Knows most of the rules of the	Knows the rules of the technical
4.1. Eastheastic and familia a	the rules of technical	apply or misapplies the elements of	technical view, correctly applies the	view, and correctly applies the
4.1. Evaluation of written	drawing	the technical representation.	basic, and with minor mistakes, the	elements of the technical view.
exam			other elements of the technical view.	
	AutoCAD computer	Does not knows interface or basic	Knows basic and some advanced	Knows basic and advanced
	program	commands. It is not capable of	commands in a computer program,	commands in a computer program,
		drawing in a computer program.	uses them with minor errors. He is	uses them without errors. Able to
			able to create a technical drawing in	fully draw a technical drawing in a
			a computer program with a little help	computer program.
			and suggestions.	

4.2. Evaluation of oral exam	Knowledge and expression.	deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples. Does not know how to apply or explain the contents of the course with examples. Chows the expert terminology.			analysis, Observes laws, acc explains t and logica the terms them w solutions given. It related	ge is at the level of synthesis and evaluation. the principles of physical curately and thoroughly he content of the material, ally connects and explains and concepts and supports with examples. Finds that were not originally notes correlations with material. Fluent in hal terminology.		
4.3. Forming the final grade according to the evaluation elements	Colloquiums/ Written exam Colloquiums/ AutoCAD The oral part of exem	2 10-12 points 2 10-12 points 2 10-12 points		3 13-15 points 3 13-15 points 3 13-15 points	16-1	4 7 points 4 7 points 4 7 points	3	5 18-20 points 5 18-20 points 5 18-20 points
4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)		Numerical grade       5 (excellent)       4 (very good)       3 (good)       2 (sufficient)		, bour	ECTS grade A B C D		
		59,9%		2 (sufficient)				E

5. ADDITIONAL INFOR	MATION ABOUT COURSE					
5.1. Compulsory literature (available in the library	Title	Number of copies in the library	Availability via other media			
and via other media)	<ol> <li>Koludrović, Ć.: Tehničko crtanje u slici s kompjuterskim aplikacijama, Rijeka, 2009.</li> <li>George Omura: Osnove programa AutoCAD 2008, MIŠ d.o.o. Zagreb, 2007.</li> </ol>	-	City library City library			
5.2. Additional literature (at the moment of changes and/or amended of study programme)	<ol> <li>Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course</li> <li>Opalić, M., Kljajin, M., Sebastijanović, S.: Tehničko crtanje, Zrinski d.d., Čakovec/Slavonski Brod, 2007.</li> <li>Klem N., Koški Ž., Otković I.: Tehničko crtanje i CAD, Građevinski fakultet Sveučilišta u Osijeku, Osijek 2006.</li> <li>Galeta T., Glazina V., Kljajin M.: AutoCAD Osnove za tehničko crtanje, Strojarski fakultet u Slavonskom brodu Sveučilišta u Osijeku, Slavonski brod 2005.</li> <li>Herold Z.: Računalna i inženjerska grafika, Fakultet strojarstva i brodogradnje Sveučilišta u Zagrebu, Zagreb 2003.</li> <li>Budimir D.: Vježbe iz AutoCAD-a, Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb 2010.</li> </ol>	_	on-line (e-learning) - - - On-line On-line			
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.					
5.4. Informing about the course and contacting the course lecturer	classes or possible adjournment will be published in a timely manner on the e-learnin Polytechnic. Students can contact teachers during the consultation period (at least one explanations they can be contacted during class. It is also possible to ask questions by e-ma which will be answered as soon as possible (no later than five working days after receiving t	hour per week), while il (from the official e-ma	e for short questions and			

1. GENERAL INFORM	IATION					
1.1. Course lecturer	Ana Perišić	1.8. Course code in ISVU	129845			
1.2. Course title	Statistics in traffic	1.9. Course code in MOZVAG				
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)			
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> , course mater	ials are on-line, 0%		
1.5. Course status(obligatory, optional)	Obligatory	1.12. Number of course revisions	4			
1.6. Year of study	2 <sup>nd</sup>	1.13. Modernization	Yes			
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% More than 20 %	X		
2. COURSE DESCRIPTION	ON					
2.1. Course objectives	The goal is to provide students with the the results.	oretical knowledge and practical skills needed for performing	ng statistical analy	sis and interpretation of		
2.2. Terms of course entry and required competences	4 year secondary education completed; c	ualification level 4.2 according to the CROQF.				
2.3. Learning outcomes on the study programme level	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. LO8: To solve problems in traffic by using analytical and / or graphical methods.					
2.4. Expected learning outcomes on the course level	Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO)			Level of LO: 1- remembering, 2- understanding, 3- application, 4-analysis, 5-evaluation,		

			6-synthesi.	<b>S</b>						
		Γο define fundamental concepts lescriptive statistics.	of descri	iptive statistics and interpret indi	cator values from the field of	1,2				
	2. Т	To calculate and interpret values for	or the mea	sures of central tendency and dispe-	rsion parameters.	3, 4				
	3. 7	To define fundamental concepts an	d solve ba	asic problems in the field of combin	atorics and probability theory.	1,4				
		To select and apply probability mo		A A A A A A A A A A A A A A A A A A A		5,3				
		To state the statistical hypothesis as		et a chi-square test is and derive conclusions on variab		6,4				
		4								
	7. Т	4								
Constructive allignement										
	no	Thematic unit	LO of the Content/teaching methods Evaluation				Time			
		Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations and.	-		1 h			
2.5. Course content according to detailed curriculum schedule	1.	Introduction to combinatorics	3, 7	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concept basic problems from the combinatorics through col- written/oral exams. Students probability theory in transpo- solving.	field of lloquia or will apply	8 h			
	2. Introduction to combinatorics			Attending lectures Actively		field of lloquia or will apply	11 h			

3.	Introduction to probability theory.	3,7	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	8 h
4.	Introduction to probability theory. A priori probability, a posteriori probability, geometric probability	3,4,7,	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	8 h
5.	Random variable, distributions, expectation, variance.	om variable, distributions, 347 involving stud	с .	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena. Students will apply probability theory in transport problems solving.	8 h
6.	Discrete random variable, binomial distribution, Poisson distribution.	3,4	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena.	8 h
7.	Continuous random variables. Normal distribution.	3,4,7	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena. Students will apply probability theory in transport problems solving.	11 h

 	1		1	1	
8.	Descriptive statistics.	1,2,7	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply methods of descriptive statistics in transport problems solving.	8 h
9.	Measures of central tendency, dispersion parameters.	1,2,7	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems.	8 h
10.	Standardized values. Outliers. Data distribution.	1,2,7	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems	11 h
11.	Hypothesis testing. Chi-square test.	5,7	Attending lectures. Actively involving students through problem solving and discussion.	Students will state the statistical hypothesis and conduct a chi-square test through colloquia or written/oral exams. Students will	11 h

							apply statistical methods for solvi problems	ing transport	
	12.	Correlation a	und regression.	6,7	involving stu	tures. Actively dents through g and discussion.	Students will conduct corre regression analysis and derive cor variable relationship through c written/oral exams. Students statistical methods for solving problems	nclusions on colloquia or will apply	11 h
	13.	Final conclus	sions. Exam		Group probler discussion. Exa	n solving and m preparation.			5 h
3. EVALUATION OF STUDENTS` WORK									
3.1. Students` obligations	<ul> <li>In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list.</li> <li>Students who have during the course achieved: <ul> <li>from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year;</li> <li>from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period;</li> <li>more than 50% - students have the right to take the final exam.</li> </ul> </li> <li>Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through three colloquia); b) by passing the exam (written and oral part of the exam).</li> </ul>								
3.2. Monitoring student work (enter the share of	Attend	lance	0.2	Writ	ten exam	3 (without colloquia)	Project		
ECTS credits for each	Experi	imental work		Rese	arch		Practical work		
activity so that the total number of ECTS points	Essay			Repo	ort		Continuous examination	0.1	
corresponds to the credit	Colloc	luium	3 (without written	Semi	inar paper		Other		

score of the course)		exam)							
	Class activity	0.2	Oral e	xam	0.5	0	Dther		
<ul><li>3.3. Student workload</li><li>4. GRADING SYSTEM</li></ul>	Ũ	all bases for 1 EC asses and exercises olloquia or exams the	s 45 hours			stimated as	::		
4.1. Grading seminar       papers									
	Unsatisf	Unsatisfactory Satisfactory						5	
4.2. Grading colloquia/ written and oral exam	Responds by men deeper understand know or apply b concepts. Does no apply or explain th course with examp	ding. Does not pasic terms and ot know how to he contents of the	without knowledge, explains	, understands	nparts new	evaluation thorough logically supported	Knowledge is at the level of analysis, synthesis evaluation. Observes the principles, accurately thoroughly explains the content of the material, logically connects and explains the terms and conc supported with examples. Finds solutions that were originally given. Notes correlations with related material		
4.3. Final grade according to evaluation elements	Final grade is determ	nined on the oral ex	kam after suc	ccessfuly passin	g the colloquia	ot written o	exam.		
	•	quired knowledge, s (teaching + final e		Nun	nerical grade		ECTS grade		
4.3. Final grade according		90-100%		5	(excellent)		А		
to absolute division		80-89,9%			very good)		В		
		65 – 79,9%			3 (good)		С		
		60-64,9%			atisfactory)		D		
	50 – 59,9% 2 (satisfactory) E								
5. ADDITIONAL COURS	E INFORMATION								
5.1. Compulsory literature (available in the library			Titl	e			Number of copies in the	Availability via other media	

and via other media)		library	
	Kovač Striko E., Fratović T., Ivanković B., Vjerojatnost i statistika, Udžbenici Sveučilišta u Zagrebu, Zagreb 2008.	1	Ne
	Šošić I., Serdar V., Uvod u statistiku, Školska knjiga, Zagreb, 2002.		Ne
	Šošić I., Primijenjena statistika, Školska knjiga, Zagreb, 2004.	12	Ne
5.2. Additional literature	Azcel A. Sounderpandian J., Complete Business Statistics, McGraw Hill, 2009.	1	Ne
(at the moment of changes	Zenzerović Z., Statistički priručnik, Sveučilište u Rijeci, Pomorski fakultet u Rijeci,	-	Ne
	Rijeka, 2004.	5	Ne
and/or amended of study	Čižmešija M., Kurnoga Živadinović N., Zbirka riješenih zadataka iz osnova statistike,	2	Ne
programme)	Mirorad d.o.o., Zagreb,2006	_	Da
	Patrick R. McMullen, Poslovna statistika za stručne studije [prijevod Devčić,K., Perišić,A.],		Da
	Veleučilište u Šibeniku, 2017 Nastavni materijali na e-learningu		
	The control of students' work quality and the acquisition of necessary knowledge and skills will	be ensured through	n interactive work. By
5.3. Quality assurance	keeping track of attendance and student activity during classes and provided information on students	s` progress through	short colloquiums and
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the e	efficiency of their	work. Students will be
acquisition of knowledge,	informed about their rights and obligations as well as the methods of work and the required literature	re. Indicators of qua	ality assurance system:
skills and competences	Student survey, monitoring of annual data from the Croatian employment service on the annual st	ate of student emp	loyment, surveys from
	employers and Alumni association.		
	It is the responsibility of each student to be regularly informed about the course, the coursework, a	nd the classroom a	ctivities. All notices of
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning site of the cou	urse and on the web	site of the Polytechnic.
course and contacting the	Students can contact teachers during the consultation period (at least one hour per week), while for sh	-	
teacher	contacted during class. It is also possible to ask questions by e-mail (from the official e-mail addres	s at @ vus.hr), whi	ch will be answered as
	soon as possible (no later than five working days after receiving the e-mail).		

4. GENERAL INFORM	<b>MATION</b>									
4.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	140771							
4.2. Course title	Traffic corridors and merchandise flows	1.9. Course code in MOZVAG								
1.3. Assistants and/or	-	Forms of teaching (number of hours Lecturing + Practical	(30 + 0 + 30 + 0)							
associates		exercises + Seminars + e learning)								
1.4. Study programme	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level),	1 <sup>st</sup> , course materials are							
(specialist, undergraduate,		percentage of on line course performance (max. 20%)	on-line, 0%							
graduate)										
1.5. Course status	Obligatory	1.12. Number of course revisions	4							
(obligatory, optional)										
1.6. Year of study	$2^{nd}$	1.13. Modernization	Yes							
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or	Less than 20% X							
		supplements	More than 20 % $\Box$							
5. COURSE DESCRIP	5. COURSE DESCRIPTION									
2.1. Course objectives	The goal is that students on the basis of theoretical knowledge and case studies:									
	<ul> <li>become familiar with the creation and develop</li> </ul>	ment of all transport modes,								
	<ul> <li>analyze and comment of commodity exchange</li> </ul>									
	<ul> <li>distinguish the main transport corridors in Eur</li> </ul>									
2.2. Terms of course entry	Enrolled 2 <sup>nd</sup> academic year, 4 year secondary education	n completed; qualification level 4.2 according to the CROQF								
and required competences										
2.3. Learning outcomes	LO1: Use and link professional terms in road traffic	technology and organization in written and oral communic	ation with the professional							
on the study programme	public in Croatian and English.									
level	•	valuate the opinions and attitudes of team stakeholders.								
	LO3: Independently and responsibly search, interpret a	с								
	LO6: Analyze and present relevant facts from the traff	•								
	LO10: Compare and select technical and technological	e e								
	LO12: Design a smaller transport process and critically									
	Learning outcomes by Bloom: (maximum 2 werbs fo	r LO)	Level of LO:							
2.4. Expected learning			1 - memory,							
outcomes on the course			2 - understanding,							

level (4-10 learning						3 - application,	
outcomes)						4 - analysis,	
						5 - evaluation,	
		6 – synthesis.					
	1. Pre	esent and comment on the historical c	6, 3				
	2. Lis	st and explain the main factors for the	e creation a	1, 2			
		alyze and evaluate world trade in go				4, 5	
		esent and comment on the traffic con		-		6,4	
	5. Lis	st and compare major transport corrid	lors in Eur	ope and the Republic of Croatia.		1, 2	
	6. Co trans	5 61	of the Ma	rco Polo Program and the current White Paper	EU about	4	
	7. Use materials and tools to search scientific and professional literature in native and English languages.						
	8. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.						
2.5. Course content according to detailed curriculum schedule	Cons	structive allignement					
	No	Thematic unit	LO of	Content/teaching methods	Eva	luation	Time
			the				
			course				
	1.	Introductory presentation		Listening to the lecture. In the course of			
		(introducing students to the course		seminars, they are introduced to the course			
		content and obligations)	-	content and documents on the e-learning		-	2 h
				page of the course by working			
				independently on a computer.			
	2.	Geo-traffic factors of formation		They listen to a lecture and read literature.	-	ium or the written	
		and location of commodity flows		At the seminar class, they individually		m students know	
		(General geo-traffic factors,	2, 7, 8	explore the content of this topic area by		e, numerate and	6 h
		natural predispositions, socio-	, , -	searching the database, and on the basis of	-	e main factors for	
		economic factors)		it and reading the literature, create a seminar paper that presents the acquired		and development y flows (general,	

3.	The development of transport on land (development of road, rail, and pipeline transport)	1, 3, 7, 8	knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	of economic groups of the world. Seminar paper created and presented (by computer programs). At the colloquium or written and oral exam students know to present and comment on the historical development of transport on land. Analyze and evaluate the merchandise trade in land traffic, in the world.	6 h
4.	The development of transport on the water (history, World and European ports, shipping routes, ships for freight)	1, 3, 7, 8	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	Categorize seaports, regions, and routes. Seminar paper created and presented (by computer programs).	6 h
5.	The development of transport on the water (video films)	1, 3, 7, 8	They use multimedia and network. They listen to a lecture and read literature. At the	At the colloquium or written and oral exam students know present	6 h

		· · · · · · · · · · · · · · · · · · ·				
				seminar class, they individually explore the	seaports in the world. Identify	
				content of this topic area by searching the	and distinguish terminals at the	
				database, and on the basis of it and reading	seaport. Analyze and evaluate	
				the literature, create a seminar paper that	the cargo traffic of the seaport.	
				presents the acquired knowledge and	Categorize seaports, ships,	
				presents their own ideas, and ways to solve	regions, and routes. Seminar	
				problems. In group work at the seminar	paper created and presented (by	
				class, the brainstorming method and the	computer programs).	
				discussion method on the topic are applied.		
	6.	The development of traffic in the		They listen to a lecture and read literature.	At the colloquium or written and	
		air (types of aircraft, aircraft		At the seminar class, they individually	oral exam students know to	
		manufacturers, airlines, airports		explore the content of this topic area by	present and comment on the	
		and routes)		searching the database, and on the basis of	historical development of traffic	
			127	it and reading the literature, create a	in the air. Analyze and evaluate	
			1, 3, 7, 8	seminar paper that presents the acquired	the merchandise in air traffic in	6 h
			o	knowledge and presents their own ideas,	the world. Categorize airports	
				and ways to solve problems. In group work	and airlines. Seminar paper	
				at the seminar class, the brainstorming	created and presented (by	
				method and the discussion method on the	computer programs).	
				topic are applied.		
	7.	The development of traffic in the		They use multimedia and network. They	At the colloquium or written and	6 h
		air (video film)		listen to a lecture and read literature. At the	oral exam students know the	
				seminar class, they individually explore the	present airport in the world.	
				content of this topic area by searching the	Identify and distinguish the	
			1 2 7	database, and on the basis of it and reading	types and capacity of aircraft for	
			1, 3, 7,	the literature, create a seminar paper that	passenger and cargo	
			8	presents the acquired knowledge and	transportation. Analyze and	
				presents their own ideas, and ways to solve	evaluate continental air routes.	
			problems. In group work at the seminar	Seminar paper created and		
			class, the brainstorming method and the	presented (by computer		
				discussion method on the topic are applied.	programs).	
				<u>^</u>		·

8.	Transport corridors in Europe		They listen to a lecture and read literature.	At the colloquium or written and	6 h
	(Trans-European transport		At the seminar class, they individually	oral exam students know state	
	network, transport corridors in		explore the content of this topic area by	and compare the main transport	
	Western and Northern Europe,		searching the database, and on the basis of	corridors in all parts of Europe	
	Pan-European transport corridors,		it and reading the literature, create a	and all branches of transport.	
	pipeline corridors, inland	5, 7, 8	seminar paper that presents the acquired	Define the term of traffic	
	waterways)		knowledge and presents their own ideas,	corridor. List the countries	
			and ways to solve problems. In group work	through which each transport	
			at the seminar class, the brainstorming	corridor passes. Seminar paper	
			method and the discussion method on the	created and presented (by	
			topic are applied.	computer programs).	
9.	Transport corridors in the		They listen to a lecture and read literature.	At the colloquium or the written	6 h
	Republic of Croatia (Geographical		At the seminar class, they individually	and oral exam, students can	
	location, traffic directions, traffic		explore the content of this topic area by	identify and compare major	
	corridors in the road, rail, air,		searching the database, and on the basis of	traffic corridors in Europe and	
	water, and pipeline transport)		it and reading the literature, create a	the Republic of Croatia. Present,	
		4, 5, 7,	seminar paper that presents the acquired	critically evaluate the traffic	
		8	knowledge and presents their own ideas,	connection of the Republic of	
			and ways to solve problems. In group work	Croatia in the road, rail, air,	
			at the seminar class, the brainstorming	pipeline and inland waterway	
			method and the discussion method on the	transport. Seminar paper created	
			topic are applied.	and presented (by computer	
				programs).	
10.	Merchandise and traffic flows in		They listen to a lecture and read literature.	At the colloquium or the written	6 h
	the modern world (Concept and		At the seminar class, they individually	and oral exam, students know	
	characteristics of traffic flow,		explore the content of this topic area by	how to define the concept of	
	commodity flows of food, raw	<b>) –</b> 0	searching the database, and on the basis of	goods traffic. Categorize,	
	materials, and industrial products)	3, 7, 8	it and reading the literature, create a	analyze and evaluate the world	
			seminar paper that presents the acquired	trade of food, raw materials, and	
			knowledge and presents their own ideas,	industrial products. List the	
			and ways to solve problems. In group work	countries with the largest	
				e	

11	. Merchandise and traffic flows of the Republic of Croatia (import and export of products, merchandise and traffic flows of the Republic of Croatia in land, water, and air)	3, 4, 7, 8	at the seminar class, the brainstorming method and the discussion method on the topic are applied. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	types of goods. Seminar paper created and presented (by computer programs). At the colloquium or the written and oral exam students know how to analyze and evaluate the trade of products in the Republic of Croatia. List the products that the Republic of Croatia imports/exports the most. Present, critically evaluate and comment on the traffic	6 h
	objective, program activities, program projects)	6, 7, 8	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	define the goal and strategy of the Marco Polo program. Distinguish activities Marco Polo. Critically evaluate the professional video films program.Seminar paper created and presented (by computer programs).	4 h
13	European Union White Paper on Transport (White Paper titles, key	6, 7, 8	They listen to a lecture and read literature. At the seminar class, they individually	At the colloquium or written and oral exam, students define	6 h

		content areas, preparing the European transport area for the future, visions for developing a competitive and sustainable transport system, strategy - what needs to be done)		explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	current EU White Paper on transport. Comment on EU professional projects in the field			
	14.	Study visit to the port of Rijeka	3, 4, 5		During the study visit, students will be able to analyze and evaluate the exchange of products through seaports in the Republic of Croatia. To present and comment on the traffic connection of the Republic of Croatia in road and rail transport. List and compare major transport corridors in Europe and the Republic of Croatia.	8 h		
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	40 h		
6. EVALUATION OF S	STUD	ENT WORK		·				
3.1. Student obligations	least paper credi exam	<b>UDENT WORK</b> In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at east 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar apers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS redits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written xam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of						

	students (active participa	tion in classes and through tw	vo exams); b) passing the	exam (written and o	ral part of the exam).	
3.2. Student work monitoring (enter the	Attending classes	1	Written exam	1 (without colloqiums)	Project	
share of ECTS credits for	Experimental work		Research		Practical work	
each activity so that the	Esaay		Report		Continuous check	
total number of ECTS credits corresponds to the	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
course credit value)	Teaching activities	1	The oral part of exam	0,5	(other)	
3.3. Student work-load		bases is 1 ECTS credit for 30			e (60 hours), prepara	tion of seminar work
		rs), preparation for the midter	m/exam through self-stue	dy (44 hours).		
4. FORMATION OF STU			-			
4.1. Evaluation of seminar	<b>Elements of</b>	Bad	Satisfy	ving	Above	average
paper	evaluation					
	Organization	The paper is not organized	distinction between the introduction, the		* *	tructured with a clear
		in a logical order and lacks				the introduction, the
		structure.	main body of the text a	and the conclusion.	•	the text and the
					conclusion, which interconnected.	ch are logically
	Terminolog, writing	Words and expressions are	Words and expressions are in line with		Words and expressions are aligned with	
	style	not in line with official	official terminology.	•••		gy and show an
		terminology. The writing	appropriate, the senten	ce structure is clear,	understanding of	their meaning. The
		style is not appropriate, the	the vocabulary is appro-	opriate and there are	writing style is exc	cellent, the sentences
		sentences are too long, of a	few grammatical errors	5.	are clear and conci	se, the vocabulary is
		modest vocabulary and			rich and there are no	o grammatical errors.
		with frequent and repeated				
		grammatical errors.				
	Citing and referencing	The sources are not listed at				ccurately, completely
	references	all. The references do not	with errors. The refere		•	sted. The references
		fit the topic and show a	the topic and show a s	atisfactory research	are appropriate, the	eir list is "rich" and

		cursory approach to exploring the topic.	attitude.		comprehensive a research approach	and shows a detailed	
4.2. Gradeing of the colloquium/written and		Bad	Satisfying	5	Above average		
oral exam	and concepts. It does	mory, without a deeper ot know or apply basic terms not know how to apply or ne course with examples.	It reproduces the basic without difficulty imparts understands the materia terms and concepts that examples.	new knowledge, l, explains the	synthesis, and eva legality, accura explains the control logically connect terms and concept examples. Finds	the level of analysis, aluation. It observes the tely and thoroughly ent of the material, and ets and explains the obs that it supports with solutions that were not It notes correlations rial.	
4.3. Forming the final grade according to the	Active attendance on class	70-75% attendance	76-86% attendance 87-100%		attendance	Mental map created, Case studies resolved	
evaluation elements		2 points	2 points 4 points 7 p		oints	3 points	
	Seminar paper	2	3	4		5	
		5 points	7 points	8 points		10 points	
	Caller and and	2	3	4		5	
	Colloquiums/ Written part of exam	50 - 64,9%	65 - 79,9%	80 -	89,9%	90 - 100%	
	written part of exam	25 points	30 points	35 ]	points	40 points	
	Oral part of exam	2	3		5	5	
		25 points	30 points	35 ]	points	40 points	
4.4. Formation of the final grade based on the	<b>U</b> 1	red knowledge, skills and eaching + final exam)	Numerical grade		EC	TS grade	
absolute distribution	90	- 100%	5 (excellen	t)		А	
	80	- 89,9%	4 (very goo	d)		В	
	65	- 79,9%	3 (good)			С	

	60-64,9%	2 (sufficient)		D
	50-59,9%		Е	
5. ADDITIONAL INFOR	MATION ABOUT COURSE			
5.1. Compulsory literature	Title		Number of copies in	Availability via
(available in the library			the library	other media
and via other media)	Sego Darijo: Traffic corridors and merchandise flows, of Sibenik, Sibenik 2016.	Script for internal use, Polytechnic		e-learning system
	Strategy for Transport Development of the Republic of (selected chapters)	Croatia for the Period 2014-2030.		Internet website
	World trade organization <u>http://www.wto.org/</u> (selected	chapters)	-	Internet website
	Transport in EU http://ec.europa.eu/transport/index_en.	htm(selected chapters)	-	Internet website
	Central Bureau of Statistics of the Republic of Croatia	https://www.dzs.hr/		Internet website
5.2. Additional literature	Teaching materials from lectures and seminars or	the e-Learning system of the	-	e-learning system
(at the moment of	Polytechnic of Sibenik for the mentioned course.			
changes and/or amended	International trade statistics https://www.trademap.org/l	ndex.aspx		Internet website
of study programme)	UN agency for food http://www.fao.org/home/en/			Internet website
5.3. Quality assurance	The control of students' work quality and the acquisit	ion of necessary knowledge and ski	lls will be ensured through	h interactive work. By
methods that ensure the	keeping track of attendance and student activity during	classes and provided information on	students` progress through	short colloquiums and
acquisition of knowledge,	homework, information for further guidance to student	s will be provided in order to increa	ase the efficiency of their	work. Students will be
skills and competences	informed about their rights and obligations as well as the	ne methods of work and the required	literature. Indicators of qu	ality assurance system:
	Student survey, monitoring of annual data from the Cr	oatian employment service on the an	nnual state of student emp	loyment, surveys from
	employers and Alumni association.			
5.4. Informing about the	It is the responsibility of each student to be regularly	informed about the course, the course	rsework, and classroom ac	ctivities. All notices of
course and contacting the	classes or possible adjournment will be published in	a timely manner on the e-learning	g site of the course and	on the website of the
course lecturer	Polytechnic. Students can contact teachers during the	e consultation period (at least one	hour per week), while for	or short questions and
	explanations they can be contacted during class. It is also	so possible to ask questions by e-mai	l (from the official e-mail a	address name@vus.hr),
	which will be answered as soon as possible (no later that	n five working days after receiving th	he e-mail).	

1. GENERAL INFORMA	1. GENERAL INFORMATION						
1.1. Course title	Road transport technology	1.8. Course code at ISVU	187604				
1.2. Course lecturer	Martina Ljubić Hinić	1.9. Course code at MOZVAG					
1.3. Assistants and/or associates	-	<ul><li>1.10. Forms of teaching (number of hours Lecturing</li><li>+Practical exercises + Seminars + e learning)</li></ul>	(45L+30P)				
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Traffic	<ul> <li>1.11. Level of e- learning application (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup></li> <li>level), percentage of on line course performance (max. 20%)</li> </ul>	1st				
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.				
1.6. Year of study	3 <sup>rd</sup>	1.13. Modernization	X Yes 🗆 No				
1.7. Credit point (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20% □				

2. COURSE DESCRIPT	ION
	The aim is to provide students with theoretical knowledge and case studies to:
	• define elements of road transport technology;
	• get to know the elements of road transport technology and their interdependence in planning the transport process;
2.1. Course objectives	• understand the technical and technological characteristics of the elements;
2.1. Course objectives	<ul> <li>adopt a critical way of concluding in organizing the modern transportation process;</li> </ul>
	• learn and learn the basic principles of road transport technology and organization and the ability to adapt the characteristics of transport
	requirements to market demands;
	• apply the learned content of this course in business practice.
2.2. Terms of course	
entry and required	Four-year secondary education completed; qualification level 4.2 according to the HKO.
competences	
2.3. Learning outcomes	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public
on the study programme	in Croatian and English.

level	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.					
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.					
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.					
	LO5: Apply basic legal and economic principles in an organization with CSR in technical and technological entities.					
	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.					
	LO8: Solve traffic problems using analytical and / or graphical methods.					
	LO9: Assess and organize processes in the field of road transport and / or transport logistics.					
	LO12: Design a smaller transport process and critically evaluate it.					
	LO13: Follow trends in technology, technology and traffic safety.					
	Learning outcomes according to Bloom's taxonomy:					
2.4. Expected learning	1. to demonstrate knowledge and understanding of course content by defining and describing the basic principles of road transport technology and organization 1,					
outcomes on the course	2. to enumerate and explain the elements of road transport technology 1, 2					
level	3. to distinguish and evaluate the technical and technological characteristics of the elements of road transport technology 3, 6					
	4. to analyze and compare the characteristics of transportation requirements 4, 2					
	5. to create a transport process, calculate fleet coefficients and indicators and recommend an optimal solution 5, 3, 6					
	6. to use materials and tools to search scientific and professional literature in their native and English languages 3					
	7. to present the acquired knowledge, ideas, problems and solutions independently and in a team 6					

	Cons	Constructive allignement							
2.5. Course content according to detailed curriculum schedule	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time			
	14.	Introduction into the course and detailed plan.	-	They listen to a lecture. During the individual work on the computer, they are introduced to the course	-	1 h			

					1	
				content and documents on the e-		
				learning page of the course.		
		Elements of the transport system. Substrate.	1, 2, 3, 6, 7	Listen to lectures and read literature.	In colloquium or the written and oral exam they define the elements of the transport system, describe and define the theory and types of the system, and list the different types of substrates and describe the characteristics of the substrate important for handling and management in the traffic process.	4 h
	15.	Transport devices.	1, 2, 3, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or the written and oral exam they define the transport devices, and state and describe their technical and technological features that are important for the optimal transport process.	5 h
	16.	Manipulation devices.	1, 2, 3, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define, enumerate and describe manipulation means, and analyze and conclude which manipulation means to choose in relation to the characteristics of the transport process.	5 h
	17.	Occurrence and development of road vehicles. Road freight vehicles.	1, 2, 3, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by	In colloquium or written and oral exams they indicate the historical development of road vehicles, and define and specify the types and types of cargo handling equipment and their	5 h

		1			
			searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.		
18.	Road freight vehicles. Exploitation parameters.	1, 2, 3, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and specify the types and types of cargo handling equipment and their technical and technological characteristics, which are important for establishing the optimal transportation process. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process.	5 h
19.	Temporal analysis of the movement of vehicles. Analysis of the movement of vehicles from the standpoint of the distance traveled and the rated load capacity of the vehicles.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define the coefficients of the time analysis of the fleet, define the coefficients and indicators of the analysis of the distance traveled and the nominal bearing capacity of the fleet, solve the problem of the traffic process and suggest ways to improve the process. The terms of reference are drafted in groups, with discussion and suggestion of measures to optimize the given transportation process.	5 h
20.	Maintenance of means of transport.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the	define the maintenance of means of transport, enumerate and describe the types of maintenance and their influence on the	5 h

		Γ				
				basis of it and the read literature, come up with their own ideas, and ways to solve problems.	are drafted in groups, with discussion and suggestion of measures to optimize the given transportation process.	
	21.	Transportation process. 1st Colloquium	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they can describe and compare the stages of the transport process in the classical and in modern transport processes.	26 h
	22.	Study trip (Faculty of Traffic Sciences in Zagreb, ORYX Safe Driving Center, Croatian Vehicle Center, ZET (bus and tram maintenance and Traffic Control and Management Center), and DOK-ING (production and maintenance of remote control machines, production and maintenance of electric vehicles)	1, 2, 3, 4, 5, 6, 7	They listen to a lecture.	In colloquium or written and oral exams they define, analyze and evaluate the technical and technological characteristics of the elements of road transport technology and their interdependence in planning the transport process.	13 h
	23.	Driver's working hours.	1, 3, 4, 6, 7	They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network.	In colloquium or written and oral exams they define and describe the importance of stationary define, describe and analyze the elements of recording the working hours of truck drivers. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process.	5 h
	24.	Roadways.	1, 2, 3, 5, 6, 7	They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based	In colloquium or written and oral exams they define and describe the road transport infrastructure and its role in the process of transport. The terms of reference are drafted	5 h

			on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network.	in groups, with discussion and proposal of measures to optimize the given transportation process.	
25.	Garage - service facilities. Road traffic information system.	1, 2, 3, 5, 6, 7	They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network.	In colloquium or written and oral exams they define and describe the road transport infrastructure, explain and comment on the role of transport infrastructure in the process of transport, and define and describe the basic features and role of the information system in modern transportation technologies. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process.	5 h
26.	Road traffic information system. Logistic concept.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network.	In colloquium or written and oral exams they define and describe the basic features and role of the information system in modern transport technologies, and describe, state and explain the role of logistics and logistic concept with the aim of establishing an optimal modern transportation process. The terms of reference are drawn up in groups, with discussion and suggestion of measures measures to optimize the given transportation process.	5 h
27.	Logistic concept. 2nd Colloquium.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they describe, state and explain the role of logistics and logistics concept with the aim of establishing an optimal modern transportation process.	26 h

	28.	Concluding cons Repeating and pr the exam.		6, 7	They listen to a individually for the	lecture and prepare le exam.	-			30 h	
3. EVALUATION OF STUDENT WORK											
3.1. Students` obligations	<ul> <li>In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: <ul> <li>From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year;</li> <li>From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period;</li> <li>More than 50% - students have the right to take the final exam.</li> </ul> </li> <li>Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam).</li> </ul>										
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Atter	ndance	1	V	Vritten exam	1 (without collog	juia) F	Project	1		
	Expe	erimental work		F	Research		F	Practical work			
	Essay		F	Report			Continuous examination				
	Colloquium 1 (without writ exam)		ten Seminar paper			(	Other				
	Class	s activity	1	C	Dral exam	1	(	Other			
3.3. Student workload	1. At 2. De	Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as: 1. Attendance 45 h 2. Design of seminar work and presentation 30 h 3. Preparation for the mid-term / midterm exam 75 h									
4. FORMATION OF GRADES											

	Element of evaluation	Bad		Satis	fying		Above average	
	Organization	The paper is not org logical order and lacks		The paper is well clear distinction introduction, the text and the conclu	between the main body of the	e distinction between the introduction, the		
4.1. Grading of seminar work	Terminology, writing style	sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.sentence structure is clear, it vocabulary is appropriate and the are few grammatical errors.and ncingThe sources are not listed at all. The references do not fit the topic and show a cursory approach toThe sources are listed incomplete and with errors. The references are relevant to the topic and show a satisfactory researd		erminology. The appropriate, the re is clear, the ropriate and there	<ul> <li>Words an</li> <li>official</li> <li>understand</li> <li>writing st</li> <li>are clear</li> </ul>	d expressions are aligned with terminology and show an ding of their meaning. The tyle is excellent, the sentences and concise, the vocabulary is here are no grammatical errors.		
	Citing and referencing references			incomplete and with errors. The references are relevant to the topic and show a satisfactory research		and consistently listed. The references are appropriate, their list is "rich" and		
	В	ad		Satisfying			Above average	
4.2. Grading of the colloguium / written and oral exam	understanding. Does n terms and concepts. I	ory, without a deeper not know or apply basic Does not know how to contents of the course	difficulty understands	roduces the basic concepts and without the imparts new knowledg stands the material, explains the tern oncepts that it supports with examples.		ynthesis and egality, accu he content connects and hat it sup olutions that	is at the level of analysis, d evaluation. It observes the rrately and thoroughly explains of the material, and logically explains the terms and concepts ports with examples. Finds t were not originally given. It ions with related material.	
4.3. Forming the final grade according to the	Active attendance	70-75% of the presence	76-86%	of the presence	87-100% of th	e presence	Case studies resolved	
evaluation elements		0 points		0 points	0 poin	its	0 points	
e valuation elements	Seminar paper	2		3	4		5	

		Made and handed over	Made and	handed over	Made and ha	unded over	Mad	e and handed over
	Examination /	2		3	4	ŀ		5
	Written	50-64%	65-	65-80% 81-90		)%		91-100%
	examination	25-32 points	33-40	) points	41-45 p	oints		46-50 points
	Oral part of the	2		3	5			5
	exam	25-32 points	33-40	) points	41-45 p	oints		46-50 points
	Percentage of acc	quired knowledge, skills and co (teaching + final exam)	Number rating			ECTS grade		
4.4. Formation of final		90 - 100%		5 (excellent)		A		
grade based on absolute		80-89,9%		4 (very good)			В	
distribution		65 - 79,9%		3 (good)			С	
		60 - 64,9%		2 (suffi	cient)		D	
		50 - 59,9%		2 (suffi	cient)		E	
5. ADDITIONAL INFO	5. ADDITIONAL INFORMATION ON THE SUBJECT							
5.1. Required		Title				Number of	copies in	Availability via other
literature (available in		The				the lib	rary	media
the library and through other media)	3. Županović, I.:	3. Županović, I.: Tehnologija cestovnog prijevoza, FPZ, Zagreb, 2002. (se			ed chapters)	3		No

No

Yes

3

0

7. Baričević, H.: Tehnologija kopnenog prometa, PFR, Rijeka, 2001.

Kingdom, 2011.

9. Lectures

8. Ortuzar, J. de D., Willumsen, L.G. : Modelling Transport, John Wiley & Sons, United

5.2. Supplementary literature (at the time

of the submission of

additions to the study

changes and / or

program)

5.3. Quality assurance	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records
methods that ensure	of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the
the acquisition of	information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and
knowledge, skills and	obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual
competences	data on annual employment status of students, employer survey and Alumni Association.
	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes
5.4. Informing about	or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students
the course and	can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted
contacting the teacher	during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as
	possible (no later than five working days after receiving the e-mail).

2. GENERAL INFORM	IATION						
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	129833				
1.2. Course title	English language I	1.9. Course code in MOZVAG					
1.3. Assistants and/or associates	Assistant	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)				
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> , course materials are on-line, 0%				
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1				
1.6. Year of study	1 <sup>st</sup>	1.13. Modernization	Yes				
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20% □				
2. COURSE DESCRIPTION	ON						
2.1. Course objectives The objective of the course is to master the basic vocabulary related to road and postal traffic as well as the predicted grammatical structures that include verb tenses, articles, personal pronouns and possessive pronouns, both in written and oral expression. The goal is also to expand the vocabulary related to the traffic, while grammar and newly acquired vocabulary are established and practiced in the exercises. Another goal of the course is to familiarize students with the basic parts of business writing. Foreign language teaching seeks to introduce students to new communication systems and facilitate their easier and more direct involvement in world events and to familiarize them with the elements of culture and civilization of English-speaking peoples. Learning a foreign language is in line with the desire to preserve the richness of diversity in a multilingual Europe, as well as to foster a culture of dialogue and civilization.							
2.2. Terms of course entry and required competences	4 year secondary education completed; qualification level 4.2 according to the CROQF.						
2.3. Learning outcomes on the study programme level	professional public in Croatian and English	h, interpret and integrate the relevant literature needed to ma					

	Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO)						ing, ding, n,	
		o understand, apply and link basi hem in written and oral commun		n the professional terminology of Engli	sh road traffic and use	6-synthesis 2, 3		
		o apply grammatical structures ir		signments		3		
		o interpret and use tenses in real-				3, 4		
		o develop a shorter essay within	the topics of	the course		3		
		o reproduce an email in English	1000 within t	he subjects of the course to everyge on	a aum aniniana	3 6		
	13. to communicate in a foreign language within the subjects of the course, to express one own opinions14. to compare and evaluate different traffic solutions						5	
		14. to compare and evaluate different traffic solutions 15. to analyse medium complex texts and solve tasks					4	
		o use part of the general language				6		
	Cons	structive allignement				L		
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluatio	n	Time	
2.5. Course content according to detailed curriculum schedule	29.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-		2 h	
	30.	Trouble With The Car, Nouns and plurals	1, 2, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or writter the applied grammatica texts and tasks understand, apply and the professional termino	al structures on are evaluated, link terms from	4 h	

				road traffic and use them in written and oral communication verb tenses are interpreted in a real linguistic context, use part of other language competences at B1 level.	
31.	Helen Catches The Train – Izražavanje Sadašnjosti (Present Simple And Continuous)	1, 2, 3, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
32.	In The Train – Trouble With The Car (Izražavanje Sadašnjosti).	1,2, 3, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing	4 h

				and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
33.	At The Airport And Air Pollution Problem (Present Tenses)	1, 2,3, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
34.	Keeping Drunken Drivers Off The Road – Izražavanje Prošlosti (Past And Perfect Tenses)	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing	4 h

	1,2, 3, 5, 6, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks,	6 h
_	1, 2, 3, 5, 6, 9	Listen to lectures and take part in discussion. Write the colloquium.	use part of other language competences at B1 level. In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer	10 h

				and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
37.	Fitness To Drive – Relative Pronouns And Possessivess	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
38.	Travelling By Tube – Personal And Reflexive Pronouns	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises. Discuss.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing	6 h

39.	The Engine Of A Car – Future Tenses – Will And Going To And Present Continuous	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences	10 h
40.	About Cars In General – Future Perfect	1,2, 3, 4, 5, 6, 7, 8, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	at B1 level. In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing	10 h

				and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
41.	A City At Sea- Living Under Cover – Future Tenses	1,2, 3, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
42.	"Jam Yesterday-Jam Tomorrow"; Passenger Transportation – Tenses Revision, Only Stricker Traffic Rules Can Prevent Accidents – Articles	1,2, 3, 6, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing	6 h

	r		<del></del>				
					and evaluating different solutions in the		
					traffic of other countries, analyze		
					medium complex texts and solve tasks,		
					use part of other language competences		
					at B1 level.		
		$\Box$	T		In colloquium or written and oral exams		
					the applied grammatical structures on		
					texts and tasks are evaluated, verb tenses		
					are interpreted in a real linguistic		
					context, can communicate in foreign		
					languages within the course topic,		
			1, 2, 3,		express their own opinions, present their		
	43.	Revision – II Kolokvij	4,5, 6, 7,	Solve exercises.	own ideas related to the development of 10 h		
			8, 9		transport solutions to develop a longer		
					essay within course topics, comparing		
					and evaluating different solutions in the		
					traffic of other countries, analyze		
					medium complex texts and solve tasks,		
					use part of other language competences		
					at B1 level.		
3. EVALUATION OF STU	UDEN	IS` WORK					
	In acc	cordance with the Regulations	on Studying	g and the Regulations on Stud	lent Assessment and Evaluation: for all full-time students		
		-		-	asses at least 50%. The students` acquired knowledge is tested		
		<u>^</u>			on during the course of the teaching process, with particular		
	-			0	her presentation of the written work that the student produces		
3.1. Students` obligations		for homework. Of particular importance for the final evaluation are the two written tests that students take during the semester. If the student					
					inal exam and is obliged to take the oral exam only. The final		
		• •		•	re: essays, objective type assignments, discussion, roleplay,		
				-	oneself about the course. All notices about maintenance or		
	<b>^</b>			<b>e .</b>	chnic of Šibenik and the e-learning page of the course, where		
				· · · · · · · · · · · · ·			

	all the information on the course as well as the teaching materials and the list of literature are also available.								
3.2. Monitoring student	Attendance 0	),5	Written exam	1 (without colloquia)	Project				
work (enter the share of	Experimental work		Research		Practical w	vork			
ECTS credits for each activity so that the total number of ECTS points	Essay		Report		Continuou examinatio				
corresponds to the credit score of the course)	Colloguium	l (without writter exam)	n Seminar paper		Other				
	Class activity 0	),5	Oral exam	1	Other				
<ul><li>3.3. Student workload</li><li>4. GRADING SYSTEM</li></ul>	4. Preparing colloquia or exams through individual work 45 hours								
4.1. Grading seminar papers	-								
	Unsatisfac	tory	Satisfactor	ry		Above average			
4.2. Grading colloquia/ written and oral exam	Responds by memore deeper understanding know or apply base concepts. Does not apply or explain the course with examples	ng. Does not sic terms and know how to contents of the	•	imparts new s the material,	evaluation. Obset thoroughly expla logically connect supported with e	t the level of analysis, synthesis erves the principles, accurately ains the content of the material, ts and explains the terms and con examples. Finds solutions that were n. Notes correlations with re	and , and neepts re not		
4.3. Final grade according	Active course attenda	70-7	75% of attendance	76-86% of a	attendance	87-100% of attendance			
to evaluation elements			3 points	7 po:	ints	20 points			
	Seminar paper								

		2	3	4	
	Colloquia/ Written exam	50-64,9%	65-79,9%	80-89,9%	
		25 points	30 points	35 points	
	01	2	3	4	
	Oral exam	25 points	30 points	35 points	
	Percentage of acquired competences (teac	-	Numerical grade	ECTS grade	
4.2 Einel and a coordina	90 - 1	100%	5 (excellent)	А	
4.3. Final grade according	90 - 3		5 (excellent) 4 (very good)	A B	
4.3. Final grade according to absolute division		89,9%	. ,		
	80 - 8	39,9% 79,9%	4 (very good)	В	
	80 - 8 65 - 7	39,9% 79,9% 54,9%	4 (very good) 3 (good)	B C	

## 5. ADDITIONAL COURSE INFORMATION

5.1. Compulsory literature	Title	Number of copies in the library	Availability via other media
(available in the library and via other media)	Katja Bošković Gazdović: "English textbook of Transport I", Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	Х
5.2 Additional literature (at the moment of changes and/or amended of study programme)	<ul> <li>Tamara Polić: "The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students", Veleučilište u Rijeci, Prometni odjel, 2007.</li> <li>Adrian Pilbeam and Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010</li> <li>A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University</li> <li>A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University</li> <li>A.J. Thomson, A.V. Martinet: "A Practical English Grammar exercises II", Oxford University</li> </ul>	10	X (elearning, handouts)

	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By
5.3. Quality assurance	keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be
acquisition of knowledge,	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system:
skills and competences	Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from
	employers and Alumni association.
	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic.
course and contacting the	Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be
teacher	contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as
	soon as possible (no later than five working days after receiving the e-mail).

3. GENERAL INFORM	IATION								
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	187599						
1.2. Course title	English language II	1.9. Course code in MOZVAG							
1.3. Assistants and/or associates	Assistant	<ul><li>1.10. Forms of teaching (number of hours Lecturing</li><li>+Practical exercises + Seminars + e learning)</li></ul>	(30+15+0+0)						
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> , course materials are on-line, 0%						
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1						
1.6. Year of study	1 <sup>st</sup>	1.13. Modernization	Yes						
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20%X□More than 20 %□						
2. COURSE DESCRIPTION	ON								
2.1. Course objectives	The aim of the course is to expand the vocabulary related to road and postal traffic as well as predicted grammatical structures that include tenses, the adjective comparison, adverbs, modal verbs, transformation of direct into reported speech in the present. The aim is also to expand the vocabulary related to traffic, while exercises determine and practice grammar and new vocabulary. Another goal of the course is to write								
2.2. Terms of course entry and required competences	Completed course English language I								
2.3. Learning outcomes on the study programme level	professional public in Croatian and English	h, interpret and integrate the relevant literature needed to m							

	Lear	Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)							
				rofessional terminology of English	road traffic in English	2, 3			
		o apply grammatical structures in t		gnments		3			
		o interpret and use tenses in real-lif				3, 4			
		o develop an essay within the topic				5,6			
		o present own ideas for developme	1		· ·	3			
		<u> </u>	6	subjects of the course, to express of	one own opinions	6			
		o compare and evaluate different tr o analyse medium complex texts an				5			
		o use part of the general language of				6			
		structive allignement	competency t			0			
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	n	Time		
2.5. Course content according to detailed	44.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-		2 h		
curriculum schedule	45.	CARS` ANATOMY - Adjectives and their formation	1, 2, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written the applied grammatica texts and tasks are evalua apply and link terms from terminology of English use them in writte	l structures on ated, understand, the professional road traffic and	4 h		

				communication verb tenses are interpreted in a real linguistic context, use part of other language competences at B1 level.	
46.	MANAGEMENT IN TRAFFIC - Adverbs and their formation	1, 2, 3, 4, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
47.	In the train – expressing present	1,2, 3, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve	4 h

				tasks, use part of other language	
				competences at B1 level.	
				In colloquium or written and oral exams	
				the applied grammatical structures on	
				texts and tasks are evaluated, verb tenses	
				are interpreted in a real linguistic context,	
				can communicate in foreign languages	
	MODERN		Listen to lectures and read	within the course topic, express their own	
48.	TRANSPORTATION	1, 2,3, 6,	literature. Use multimedia and	opinions, present their own ideas related	4 h
	(HYDROFOILS) – Modal	9	internet. Solve exercises.	to the development of transport solutions	
	verbs			to develop a longer essay within course	
				topics, comparing and evaluating different	
				solutions in the traffic of other countries,	
				analyze medium complex texts and solve	
				tasks, use part of other language	
				competences at B1 level.	
				In colloquium or written and oral exams the applied grammatical structures on	
				texts and tasks are evaluated, verb tenses	
				are interpreted in a real linguistic context,	
				can communicate in foreign languages	
			Listen to lectures and read	within the course topic, express their own	
	RAIL TRAFFIC IN EUROPE	1, 2, 3, 5,	literature. Use multimedia and	opinions, present their own ideas related	
49.	– Expressing habit	6, 9	internet. Solve exercises.	to the development of transport solutions	4 h
				to develop a longer essay within course	
				topics, comparing and evaluating different	
				solutions in the traffic of other countries,	
				analyze medium complex texts and solve	
				tasks, use part of other language	
				competences at B1 level.	

50.	Traffic in the USA – Tenses	1,2, 3, 5, 6, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
51.	Traffic for tomorrow – Tenses, Kolokvij	1, 2, 3, 5, 6, 9	Listen to lectures and take part in discussion. Write the colloquium.	to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
52.	Hovercraft – Indirect speech	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on	6 h

53.       Magnetic levitation trains – personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read ingustic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign language         53.       Magnetic levitation trains – personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other languages within develop a longer essay within course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future       1, 2, 3, 5, 6, 9       Listen to lectures and		1		1	1		r
53.       Magnetic levitation trains- Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Solve exercises. Discuss.       In colloquium or written and oral exams the applied grammatical structures on exist and tasks are evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         53.       Magnetic levitation trains- personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Solve exercises, analyze medium complex texts and asolve tasks, use part of other language ompetences at B1 level.       6 h         54.       Steam engine cars – Future lenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and literature. Use multimedia and intermet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and asolve tasks, use part of other language competences at B1 level.       6 h							
53.       Magnetic levitation trains – Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Solve exercises.       In colloquium or written and oral exams within the course topic exars within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complete texts and solve tasks, use part of other language competences at B1 level.         53.       Magnetic levitation trains – Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Solve biscuss.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h							
53.       Magnetic levitation trains - Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read biscuss.       Listen to lectures and read biscuss.       In colloquium or written and oral exams to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.         53.       Magnetic levitation trains - Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read biscuss.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foregin languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and intermet. Solve exercises.       1n colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h							
53.       Magnetic levitation trains - pronouns       1, 2, 3, 5, 9       Listen to lectures and read literature. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and ladve tasks, use part of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h						· · ·	
53.       Magnetic levitation trains – Personal and reflexive pronouns       1, 2, 3, 5, 4.       Listen to lectures and read titerature.       Listen to lectures and read titerature.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within course to the development of transport solutions to the d						· · ·	
53.       Magnetic levitation trains – Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read biscuss.       Listen to lectures and read biscuss.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       6 h						· ·	
53.       Magnetic levitation trains – Personal and reflexive pronouns       1, 2, 3, 5, 54.       Listen engine cars – Future tenses       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign language within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h						to develop a longer essay within course	
Magnetic levitation trains - Personal and reflexive pronouns1, 2, 3, 5, 6, 9Listen to lectures and read Discuss.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course to the development of transport solutions to advelop a longer essay within course to the development of the language competences at B1 level.6 h54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read literature. Use multimedia and internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses texts and tasks are evaluated, verb tenses10 h						topics, comparing and evaluating different	
53.       Magnetic levitation trains – Personal and reflexive pronouns       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.       6 h         54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h						solutions in the traffic of other countries,	
53.Magnetic levitation trains - Personal and reflexive pronouns1, 2, 3, 5, 6, 9Listen to lectures and read literature. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign language within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.6 h54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read literature. Use multimedia and internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read literature. Use multimedia and internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses						analyze medium complex texts and solve	
53.Magnetic levitation trains – Personal and reflexive pronouns1, 2, 3, 5, 6, 9Listen to lectures and read literature. Solve Discuss.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.6 h54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h						tasks, use part of other language	
53.Magnetic levitation trains - Personal and reflexive pronouns1, 2, 3, 5, 6, 9Listen to lectures and read literature. Solve exercises.the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.6 h54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read literature. Use multimedia and internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h						competences at B1 level.	
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53.Magnetic levitation trans – Personal and reflexive pronouns1, 2, 3, 5, 6, 9Listen to lectures and read literature. Discuss.opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.6 h54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read literature. Use multimedia and internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h						can communicate in foreign languages	
53.Personal and reflexive pronouns1, 2, 3, 5, 6, 9literature. Discuss.Solve exercises.exercises.opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.6 h54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h			Magnetic levitation trains		Listen to lectures and read	within the course topic, express their own	
54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h		53	e	1, 2, 3, 5,		opinions, present their own ideas related	6 h
54.       Steam engine cars – Future tenses       1, 2, 3, 5, tenses       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses         10 h		55.		6, 9		to the development of transport solutions	0 11
54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h			pronouns		Discuss.	to develop a longer essay within course	
54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h						topics, comparing and evaluating different	
54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and internet. Solve exercises.       In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h						solutions in the traffic of other countries,	
54.       Steam engine cars – Future tenses       1, 2, 3, 5, 6, 9       Listen to lectures and read literature. Use multimedia and the applied grammatical structures on texts and tasks are evaluated, verb tenses       10 h						analyze medium complex texts and solve	
54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9Listen to lectures and read literature. Use multimedia and internet. Solve exercises.In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h						tasks, use part of other language	
54.Steam engine cars – Future tenses1, 2, 3, 5, 6, 9literature. Use multimedia and internet. Solve exercises.the applied grammatical structures on texts and tasks are evaluated, verb tenses10 h						competences at B1 level.	
54.tenses6,9internet. Solve exercises.texts and tasks are evaluated, verb tenses10 h					Listen to lectures and read	In colloquium or written and oral exams	
tenses 6,9 internet. Solve exercises. texts and tasks are evaluated, verb tenses		51	Steam engine cars – Future	1, 2, 3, 5,	literature. Use multimedia and	the applied grammatical structures on	10 h
are interpreted in a real linguistic context,		54.	tenses	6, 9	internet. Solve exercises.	texts and tasks are evaluated, verb tenses	1011
						are interpreted in a real linguistic context,	

				can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
55.	Post office and their role in the progress of mankind – Future tenses	1,2, 3, 4, 5, 6, 7, 8, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
56.	Climate changes and telecommunication	1,2, 3,4, 5, 6, 7, 8, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own	4 h

			their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
57.	Sattellites	1,2, 3,4, 5, 6, 7, 8, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
58.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions	10 h

3. EVALUATION OF STU	UDENTS` WORK				to develop a longer est topics, comparing and est solutions in the traffic analyze medium complet tasks, use part of competences at B1 leve	evaluating different of other countries, lex texts and solve other language	
3.1. Students` obligations	attendance of at lease during the course cl attention being paid for homework. Of p successfully passes exam consists of a presentation creation eventual postponem	st 70% is required. Part lasses. Special conside to the student's active particular importance for both exams, he / she is written and an oral part n, etc. The obligation ent of teaching will be	t-time students ration is given participation ir or the final eva exempted from rt. Ways to ch of each stude published on t	the Regulations on Student <i>A</i> are required to attend classes a to the student's evaluation due teaching as well as his/her production are the two written tests in the written part of the final expect learning outcomes are: est nt is to regularly inform onese he web site of the Polytechnic materials and the list of literature	tt least 50%. The students` ring the course of the teac esentation of the written w ts that students take durin kam and is obliged to take says, objective type assig elf about the course. All of Šibenik and the e-learn	acquired knowledge ching process, with pay work that the student p ng the semester. If the the oral exam only. T gnments, discussion, r notices about mainter	is tested articular produces student The final roleplay, ance or
3.2. Monitoring student work (enter the share of	Attendance	0,5	Written exam Research	m 1 (without colloquia)	Project Practical work		
ECTS credits for each activity so that the total	Experimental work Essay		Report		Continuous examination		
number of ECTS points corresponds to the credit score of the course)	Colloquium	1 (without written exam)	Seminar pap	ber	Other		
	Class activity	0,5	Oral exam	1	Other		
3.3. Student workload	5. Attending c	n all bases for 1 ECTS lasses and exercises 45 olloquia or exams throu	hours	work 45 hours	ed as:		

4. GRADING SYSTEM							
4.1. Grading seminar papers	-						
	Unsatisfactory		Satisfact	ory		Above average	
4.2. Grading colloquia/ written and oral exam	Responds by memory, we deeper understanding. It know or apply basic te concepts. Does not know apply or explain the contex- course with examples.	Does not erms and w how to	without difficulty impart understands the mater	rts new knowledge,	evaluation. Obs thoroughly expla logically connect supported with e	at the level of analysis, synthesis serves the principles, accurately ains the content of the material, ets and explains the terms and con- examples. Finds solutions that were n. Notes correlations with re	and , and ncepts re not
	Active course attendance	70-	-75% of attendance	76-86% of attendance		87-100% of attendance	
	Active course altendance		3 points	7 po	oints	20 points	
	Seminar paper	Seminar paper					
4.3. Final grade according to evaluation elements	.			3	3	4	
to evaluation ciements	Colloquia/ Written exam		50-64,9%	65-79	9,9%	80-89,9%	1
	ן 	1	25 points	30 pc	oints	35 points	1
	Oral exam	1	2	3	3	4	1
	Orai exam	1	25 points	30 pc	oints	35 points	
	Percentage of acquire competences (tea			Numerical grade	2	ECTS grade	
4.3. Final grade according	· ·	- 100%		5 (excellent)		А	
to absolute division		- 89,9%		4 (very good)		В	
		- 79,9%		3 (good)		С	
		- 64,9%		2 (satisfactory)		D	
	50 -	- 59,9%		2 (satisfactory)		E	

5. ADDITIONAL COURS	5. ADDITIONAL COURSE INFORMATION									
5.1. Compulsory literature	Title	Number of copies in the library	Availability via other media							
(available in the library and via other media)	Katja Bošković Gazdović: "English textbook of Transport I", Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	Х							
5.2 Additional literature (at the moment of changes and/or amended of study programme)	<ul> <li>Tamara Polić: "The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students", Veleučilište u Rijeci, Prometni odjel, 2007.</li> <li>Adrian Pilbeam and Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010</li> <li>A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University</li> <li>A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University</li> <li>A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University</li> </ul>	10	X (elearning, handouts)							
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.									
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursew classes or possible adjournment will be published in a timely manner on the e-learning site of the Students can contact teachers during the consultation period (at least one hour per week), while be contacted during class. It is also possible to ask questions by e-mail (from the official e-main as soon as possible (no later than five working days after receiving the e-mail).	he course and on the we	ebsite of the Polytechnic. nd explanations they can							

## PK-SP-2. Description of a new course an amended and/or changed or modernized course.

1. GENERAL INFORMA	TION ABOUT THE SUBJECT		
1.1. Title	Knowledge of goods	1.8. ISVU course code	187586
1.2. Lecturer	Nikolina Gaćina	1.9. MOZVAG course code	
1.3. Assistants and/or associates	None	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate Professional Study Trafic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2.
1.6. Study year	1 <sup>st</sup>	1.13. Modernization	X yes 🗆 no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20%XMore than 20 %□

2. COURSE DESCRIPTION	ON
2.1. Course objectives	<ul> <li>The goal is to provide students with theoretical knowledge and case studies:</li> <li>Defining the basic concepts of the science of knowledge of goods,</li> <li>Understanding the specificity of particular types of goods, their identification, conditions of packaging, transport and storage, and environmental friendliness;</li> <li>Understanding the need and importance of standardization and product quality,</li> <li>Understanding the importance and types of strategic goods,</li> <li>Apply the learned content of this course in business practice.</li> </ul>
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study programme	LO 1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional puublic in croation and English.

level	LO 2: To organize and implement team work and critically judge the opinions and atitudes od team members								
	LO 3: To individually and responsibly search, interpret and integrate the revevant literature needed to make decisions								
	LO 6: To analyze and present relevant facts from the field of traffic needed to reach conclusions								
	LO 10: To compare and choose technical and technollogical solutions in treffic and / or traffic logistics								
	LO 13: to track trends in the development of technique, technology and safety in traffic								
	Learning outcomes towards Bloom's taxonomy: (up to two verbs per LO)	<ul> <li>LO Level:</li> <li>1. Recapture,</li> <li>2. Understanding,</li> <li>3. Application,</li> <li>4. Analysis,</li> <li>5. Evaluation,</li> <li>6. Synthesis</li> </ul>							
2.4. Expected learning	1. Demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts of the science of knowledge of goods	1, 2							
outcomes on the course	2. Categorize and compare the basic concepts of the science of knowledge of goods	4, 5, 6							
level	3. Compare and distinguish product types, their identification, labeling, and transportation and storage conditions	4, 5							
	4. Categorize and compare types of packaging material	4, 5							
	5. Analyze and evaluate the specific characteristics and reasons for the application of particular packaging materials for different products	4, 5,6							
	6. Distinguish and compare different processes of food preservation in relation to the longevity and preservation of the nutritional value of the product	4, 5, 6							
	7. Analyze and anticipate the importance of food and non-food commodities of today and today	4,5							
	8. Present the acquired knowledge, ideas, problems and solutions independently and in a team.	6							

2.5. Course content	Const	ructive alignment				
according to detailed	No:	Thematic ensemble / Lecture	Course	Content / Teaching	Evoluction	Time
curriculum schedule	INO:	Торіс	LO	Method	Evaluation	needed

59.	Introduction to the course and detailed curriculum. Introduction to writing a seminar paper.	-	Listen to the lecture.	-	2 h
59.	The basics of the science of knowing goods. Defining basic concepts.	1, 2	They listen to a lecture and read literature.	At the colloquium or the written and oral exam: define, describe, categorize and compare the basic concepts of the science of knowledge of goods.	4 h
60.	Product identification. GS1.	1, 2, 3, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature.	At the colloquium or the written and oral exam they know: explain the reasons for the product identification, define GS1, enumerate the types of identification numbers and analyze their specific application.	10 h
61.	Norms and norms. The basics of quality management.	1, 2, 3, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature.	At the colloquium or the written and oral exam they know: define norms and standardization, describe and analyze the meaning of standardization, classify norms, define basic concepts of quality.	6 h
62.	ISO. ISO standards.	1, 2, 3, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature.	At the colloquium or the written and oral exam they know: define and explain the meaning and importance of ISO, enumerate and describe ISO standards and their form.	6 h
63.	Packaging. Types of packaging material.	1, 2, 3, 4, 5, 6, 8	They listen to a lecture, watch multimedia, present a seminar paper, followed by a discussion, and read literature. They watch multimedia.	At the colloquium or the written and oral exam they know: define the packaging and explain the importance of packaging the product, list and describe the advantages and disadvantages of individual packaging materials, choose the appropriate packaging material for the specific product and explain	10 h

				their choice. List and analyze the primary functions of packaging material.	
64.	Packaging features. Product Graphic Labeling.	1, 2, 3, 4, 5, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: define and classify the functions of packaging, evaluate the choice of packaging material with regard to its function, define, describe and analyze the graphic marking of products.	8 h
65.	Specific features of product storage and transportation.	1, 2, 3, 4, 5, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and describe the types of warehouses, storage and transport conditions, and evaluate the appropriate type of storage and transport depending on the type of product.	6 h
66.	Perishable products. Declaring food.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and describe the types of perishable products, their specificities and conditions of storage and transport, to analyze the basic declaration of food.	6 h
67.	Physical methods of food preservation.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and describe the types of physical methods of preservation, to analyze the applicability depending on the type of food products in terms of better preservation of nutritional value and longer shelf life, to analyze the advantages and disadvantages of individual physical methods. And evaluate combining different canning	10 h

					methods.	
	68.	Food preservation with natural and chemical preservatives. Combining canning types.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: define and describe natural and chemical preservatives, analyze applicability depending on the type of food products in terms of better preservation of nutritional value and longer shelf life, analyze the advantages and disadvantages of individual methods and evaluate the combination of different preservation methods.	6 h
	69.	Polymeric materials.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define, describe and classify polymeric materials, describe their advantages and disadvantages and storage conditions.	10 h
	70.	Hazardous Substances.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and classify the types of dangerous substances, to analyze the possible danger of the same.	6 h
	Transport and disposal of hazardous substances.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and classify the labeling of hazardous substances during transport, to evaluate the disposal and labeling of hazardous waste.	6 h	
	72.	Strategic Goods.2. Colloquium.	1, 2, 3, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and categorize strategic goods, to explain their importance.	4 h

	73.	Concluding Con Repetition and I	nsiderations / Exam Preparation.	-	to a lecture and dividually for		20 h
3. EVALUATION OF ST	UDENT	WORK					
3.1. Students` obligations	attenda semina • • Studer a) duri the ser b) dur	ance. Part-time stu ar paper. Students From 0 – 24,99 academic year; From 25 – 49,9 in a regular or e More than 50% nts can pass the fin ing the course thr minar paper and pain ing the course (a	udents have the oblig who have during the & ECTS credits- is n & ECTS credits - is n xtraordinary exam pe ECTS credits - stude hal exam in two ways ough continuous stud roject, passing two co	ation to attend at least course achieved: rated F (unsuccessful) rated FX (inadequate) riod; nts have the right to ac : lent attendance (active blloquia);	50% of lectures. A and cannot get I and has to come of cess the final examparticipation in t	d Evaluation: for all regular students atter All students must create, present and posi ECTS credits and must re-enrol the subj out and pass the test (exam). A written ex m of the subject. the lessons, solving case studies, making ting and presenting the seminar paper an	itively colloquy ject in the next am can be held and presenting
	Attend	lance	0,25	Written exam	2 (without colloquiums)	Project	
3.2. Monitoring student work (enter the share of	Experi	imental work		Research		Practical work	
ECTS credits for each activity so that the total	Essay			Report		Continuous examination	
number of ECTS points corresponds to the credit score of the course)	Colloquium 3 (without the written and oral exams)		Seminar paper	0,75	Other (inscribe)		
secre of the course)	Class a	activities		Oral exam	1 (without colloquiums)	b) Other (inscribe)	
3.3. Student workload	The st	udent's workload	on all bases amounts	to 1 ECTS point for 30	hours of work pe	er semester and is estimated as:	

	Commitment		Hours (estimate)				
	5. Attending clas	ses			45		
	6. Creating and P	resenting seminar pape	er		10		
	7. Preparation for	the Colloquium / example the colloquium / exam	m through self-stuc	dy	65		
4. GRADING							
	Valuation Element	Poor			Satisfying		Above average
	Organization The paper is not organized in a logical order and its structure is lacking.		ts structure is in	elear ntrodu	aper is well structured distinction betwee action, the main part ad the conclusion.	n the	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another
4.1. Seminar paper grading	Terminology, writing style	Terminology, writing style harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent and repeated grammatical		Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.		writing entence alary is	Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
	Quoting and referencing	references do not m	are not specified at all. The es do not match the topic w a superficial approach to		ces are listed, but incomplete with errors. The references are opriate for the subject and a satisfactory research ide.		Sources are accurate, complete and consistent. The references are appropriate, their list is "rich" and comprehensive and shows a robust research approach.
	Poo	)r	S	Satisf	ying		Above average
4.2. Colloquium / exam grading	understanding. Does not know and does nottransfersapply the basic terms and concepts. Cannotsubject n		transfers new subject matter, e	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.		Legitimacy accurately and thoroughly	

				that	cepts that it encapsula are not originally elation with correlative	given. There is a	
4.3. Creating a final grade according to evaluation elements	Active participation in the lessons	70 of attendance	71-80% of attendance	81-90% of at	tendance	91-100%	
		2 points	3 points	4 points		5 points	
	Research paper	2	3	4		5	
		8 points	10 points	12 points		15 points	
	Colloquium / written exam	2	3	4		5	
		50-64,9%	65-79,9%	80-89,9%		90-100%	
		25 points	35 points	40 points		50 points	
	Oral exam	2	3	5		5	
		15 points	20 points	25 poir	nts	30 points	
	Percentage of adopted knowledge, skills and competences (teaching + final exam)		Numerous grade		ECTS grad	de	
4.4. Creating a final grade	90-100%		5 (excellent)		А		
according to absolute	80-89,9%		4 (very good)			В	
allocation	65 - 79,9%		3 (good)		С		
	60 - 64,9%		2 (sufficient)	D			
5. ADDITIONAL INFOR		– 59,9% E COURSE	2 (sufficient)		E		
5.1. Compulsory literature (available in the library and through other media)	Title			Number of copies in the library	Availability via other media		
	<ol> <li>Gacina, N. (2012). Knowledge of goods. Internal script of the Polytechnic of Šibenik, Šibenik.</li> </ol>					e-learnigng VUŠ-a	
	<ol> <li>Lazibat, T. (2004). Knowledge of goods and quality management. Synergy Publishing, Zagreb. (Chapters selected)</li> </ol>			4			

1. Andrijanić, I., Balen, M., Lazibat, T. (2001). Knowledge of merchandise in commerce.

4

5.2. Additional literature

(at the moment of changes	Mikrorad, Zagreb. (Chapters selected)		
and/or amended of study	2. Štrumberger, N. (2000). Handling of materials in traffic. Faculty of Transportation	4	
programme)	Sciences, Zagreb. (Chapters selected)	4	
	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By		
5.3. Quality assurance	keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and		
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be		
acquisition of knowledge,	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system:		
skills and competences	Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from		
	employers and Alumni association.		
	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any		
5.4. information on the	delay in teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the		
course and contact with	teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It		
the teacher	is possible to ask questions by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no		
	later than five working days from the receipt of e-mail).		

1. GENERAL INFORMATION					
1.1. Course title	Traffic in tourism	1.8. Course code at ISVU	142664		
1.2. Course lecturer	Ana-Mari Poljičak	1.9. Course code at MOZVAG	-		
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)		
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> - some of the material available Online, 0%		
1.5. Course status (obligatory, optional)	Optional	1.12. Number of course revisions	4.		
1.6. Year of study	3 <sup>rd</sup>	1.13. Modernization	X Yes 🗆 No		
1.7. Credit point (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20% □		

2. COURSE DESCRIPTION				
2.1. Course objectives	<ul> <li>The goal is to provide students with theoretical knowledge:</li> <li>Define basic transport and tourism terms;</li> <li>Understand synergies between transport and tourism.</li> <li>Apply the learned content of this course in business practice.</li> </ul>			
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.			
2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.			
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.         LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.         LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.			

		Level of LO:
		1 - memory,
	Learning outcomes according to Bloom's taxonomy:	2 - understanding,
	(maximum 2 werbs for LO)	3 - application,
		4 - analysis,
2.4. Expected learning		5 - evaluation,
outcomes on the course		6 – synthesis.
level	1. demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts	1, 1
	in transport and tourism,	1, 1
	2. to analyze and compare the transport sectors in the tourism industry,	4, 2
	3. propose a form of tourist transport as part of a tourism product,	6
	4. use materials and tools to search scientific and professional literature in their native and English languages,	3
	5. Present the acquired knowledge, ideas and solutions independently and in a team.	6

	Cons	tructive allignement				
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
2.5. Course content according to detailed curriculum schedule	74.	Introduction into the course and detailed plan.	-	They listen to a lecture. During the individual work on the computer at the seminar teaching, they are introduced to the course content and documents on the e-learning page of the course.	_	2 h
		Theoretical basis of traffic	1, 6	They listen to a lecture and read literature.	At the midterm or the written and oral exam they define the traffic system and state the division of traffic. Define traffic product and cite and explain the elements of production of transport products.	1 h

7	75.	Interdependence of transport and tourism.	1	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, they can enumerate and explain ways of influencing tourism on traffic and explaining the impact of traffic on tourism. Explain the limiting impact of transport on tourism and tourism on transport. Define transport service and tourism product. Explain the transport service as a tourism product and give an example of the absence of a transport service in a tourism product. List and explain the categories of users of tourist trips and motives for traveling. Define and explain tourism as a system.	6 h
7	76.	Transport branches in the connection of emitting and receptive areas.	1, 2	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can explain the emissive and receptive tourist countries and give an example. Explain the characteristics of traffic branches in the interconnection of emissive and receptive areas.	6 h
7	77.	Traffic as part of a tourist product.	1, 2, 3, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired	At the colloquium or the written and oral exam they can define trips and multi-day bus trips. Explain panoramic and shuttle transportation. Give an example of local tourist lines. Define the rental of road vehicles in a tourist destination. List ways to use your bike while on vacation. Seminar	6 h

			knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. They listen to a lecture and read	paper created and presented (using computer programs independently).	
78.	Traffic as part of a tourist product.	1, 2, 3, 4, 5	literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can explain the panoramic transport by rail in a limited area of the tourist destination. Define cable cars and funiculars and give an example of their use in tourist destinations. Explain nautical tourism and list its parts. Give an example of river-lake-canal round-trip cruises. Seminar paper created and presented (using computer programs independently).	6 h
79.	Field teaching - travel agency Pražen putovanja d.o.o.	3, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can explain the excursions and multi-day bus trips, explain the rental of road vehicles in the tourist destination and give an example of panoramic and shuttle transportation. Seminar paper created and presented (using computer programs independently).	5 h
80.	Guest lecture in English: Tourism and Railways (Basic knowledge), Glacier Express - the slowest express Train in the World, the Trans-	1, 3, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and	At the colloquium or the written and oral exam they can describe the first rail trip in the World. Give an example of rail transport as part of a tourism product and describe it. Define high-speed rail and give	9 h

	Siberian Railway (Russian		the literature read, create a seminar	examples. Seminar paper created and	
	tourism offer).		paper that presents the acquired	presented (using computer programs	
			knowledge. In the group work on	independently).	
			seminar teaching, the brainstorming		
			method and the discussion method on		
			the topic are applied.		
			They listen to a lecture and read		
			literature. At the seminar teaching,		
			they individually explore the content	At the colloquium or the written and oral	
			of this topic area by searching the	exam they can explain the history of air	
	Air traffic as part of a tourist		database, and on the basis of it and	traffic and define tourist services based on	
81.	product, charter travel.	1, 3, 4, 5	the literature read, create a seminar	air traffic. Comment on the role of air	5 h
	Colloquium I.		paper that presents the acquired	transport in tourism in the Republic of	
			knowledge. In the group work on	Croatia. Find out the difference between	
			seminar teaching, the brainstorming	regular and charter air traffic.	
			method and the discussion method on		
			the topic are applied.		
			They listen to a lecture and read		
			literature. At the seminar teaching,	At the colloquium or the written and oral	
			they individually explore the content	exam they can explain regular and charter	
			of this topic area by searching the	air traffic. Explain the features of low-cost	
	Field teaching - Airport		database, and on the basis of it and	companies. Give examples of low cost	
82.	Zadar/Split	1, 3, 4, 5	the literature read, create a seminar	airlines. Explain pick-up and departure	3 h
	pit		paper that presents the acquired	technology for airport passengers. Give an	
			knowledge. In the group work on	example of air traffic services to tourists	
			seminar teaching, the brainstorming	with special requirements.	
			method and the discussion method on	· · · · · · · · · · · · · · · · · · ·	
			the topic are applied.		
	Field teaching - Dogus		They listen to a lecture and read	At the colloquium or the written and oral	
83.	Marine in Šibenik	1, 4, 5	literature. At the seminar teaching,	exam they can explain the purpose of	5 h
	(Mandalina)		they individually explore the content	marinas and rent a boat. Seminar paper	

			of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on		
84.	Logistics in tourism	1, 4, 5	the topic are applied. They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can enumerate the elements of the logistics system and distinguish between the logistics models. Comment on the role of logistics processes in supplying a tourist destination. Seminar paper created and presented (using computer programs independently).	6 h
85.	Economics of Exploitation of Traffic Vehicles and Traffic Infrastructure.	1, 2, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can state the determinants of the quality of the transport service in tourism. Define the fare and explain the specificities of costs and fares in individual traffic branches. Seminar paper created and presented (using computer programs independently).	5 h

	86.	Economics of Exploitation of Traffic Vehicles and Traffic Infrastructure.	1, 2, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can define and list the types of oscillations. Explain measures to mitigate the effects of oscillations. Seminar paper created and presented (using computer programs independently).	5 h
	87.	Parking in tourist destinations. Colloquium II.	1, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or written and oral exam knows define basic terms of parking and differentiate ways of parking in tourist destinations.	3 h
	88.	Concluding considerations. Repeating and preparing for the exam.		They listen to a lecture and prepare individually for the exam.	-	17h
3. EVALUATION OF ST	UDEN	TWORK				
3.1. Students` obligations	least	<ul> <li>accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at ast 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar aper. Students who have achieved during the course:</li> <li>From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next</li> </ul>				

	regular or extr • More than 50 Students can take the f participation in classes b) during class (active	9% - are assessed by F2 aordinary exam period; 9% - students have the r final exam in the course s and preparation of a r	right to take the fi e in two ways: a) mental map and c and preparation of	nal exam. during the c case study,	course of teaching the preparation and press	ough continuous monit entation of seminar wor	xam (test) can be held in oring of students (active k and two colloquium); tation of seminar work)
3.2. Monitoring student	Attendance		Written exam	-	5 (without lloquia)	Project	
work (enter the share of	Experimental work		Research			Practical work	
ECTS credits for each activity so that the total number of ECTS points	Essay		Report			Continuous examination	
corresponds to the credit score of the course)	Colloquium	1,5 (without written exam)	Seminar paper	0,:	5	Other	
score of the course)	Class activity	0,5	Oral exam	0,:	5	Other	
	Student workload on a	ll bases is 1 ECTS cred	lit 30 semester ho	urs and is e	estimated as:		
	Obligation				Hours (estimated)		
3.3. Student workload	8. Active class	attendance			45		
	9. Designing a s	seminar paper and pres	entation		10		
	10. Preparing col	lloquia or exams throug	gh individual wor	k	35		
4. FORMATION OF GRA	ADES						
4.1. Evaluation of a of	Element of evaluation	Bad	l		Satisfying		ve average
seminar work	Organization	The paper is not logical order and lac	•	clear di	t is well structured w stinction between on, the main body o	the clear distinct	vell structured with a ion between the e main body of the text

				text and the conclus	ion.	and the conclusion and the concl	· · · · · · ·	are
	Terminology, writing style	with official terminology. The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.		Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors.		Words and e with official to understanding writing style sentences are	expressions are align erminology and show of their meaning. T e is excellent, clear and concise, rich and there are	y an Γhe the the
	Citing and referencing references	The sources are not The references do no and show a cursory exploring the topic.	t fit the topic	The sources are incomplete and wi references are relev and show a satisfa attitude.	th errors. Th ant to the top	he completely a ic The reference ch list is "rich"	es are accurate nd consistently list es are appropriate, th and comprehensive a ed research approach.	ted. neir and
	Ba	d		Satisfying			e average	
4.2. Grading of the colloguium / written and oral exam	It responds by memo understanding. Does basic terms and conce how to apply or expla course with examples.	not know or apply epts. Does not know	difficulty understands t	the basic concepts an imparts new kn he material, explains that it supports with e	d without nowledge, the terms xamples. Sy te th th co co Fi gi	nthesis and eval- gality, accurately e content of the onnects and exp oncepts that it su	the level of analyst uation. It observes and thoroughly expla material, and logica plains the terms a upports with example at were not original prrelations with rela	the uins ally and les. ally
4.3. Forming the final	Active attendance	70-75% of the presence	76-86%	of the presence	87-100% (	of the presence	Case studies resolv	ved
grade according to the		2 points		4 points	7	points	10 points	
evaluation elements	Seminar paper	2		3		4	5	
evaluation ciements		5 points		7 points	8	points	10 points	
	Examination / Written	2		3		4	5	

	examination	50-64,9%		65-79,9%	80-89,9%	90-100%
		25 points		30 points	35 points	40 points
	Oral part of the exam	2		3	4	5
	Oral part of the exam	25 points		30 points	35 points	40 points
	-	equired knowledge, skills s (teaching + final exam		Number ratin	g EC	TS grade
4.4. Formation of final		90-100%		5 (excellent)		А
grade based on absolute		80-89,9%		4 (very good)	)	В
distribution		65 - 79,9%				С
		60-64,9%		2 (sufficient)		D
		50-59,9%		2 (sufficient)		Е

## 5. ADDITIONAL INFORMATION ON THE SUBJECT

5.1. Required literature	Title	Number of copies in the library	Availability via other media
(available in the library and through other media)	<ol> <li>Mrnjavac E.: Promet u turizmu, Fakultet za turistički i hotelski menadžment, Opatija, 2006. (selected chapters)</li> </ol>	5	
	5. Maršanić R.: Parkiranje u turističkim destinacijama, IQPLUS d.o.o., Rijeka 2008.	5	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	<ol> <li>Baričević H.: Promet u turizmu, Visoka škola za turizam, Šibenik, 2003.</li> <li>Lumsdon L. M., Page S. J.: Tourism and Transport, Issues and Agenda for the New Millennium, Routledge, 2003.</li> </ol>	11 0	Available online
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	Quality control of students' work and the acquisition of necessary knowledge and skills will be en records of students' attendance and activity in the classroom and information obtained about st provide the information needed for further guidance to students in order to increase their work efficient rights and obligations as well as working methods and required literature. Quality assurance system CES annual data on annual employment status of students, employer survey and Alumni Association	udent progress through ciency. Students will be indicators: Student surv	the midterm will instructed in their

	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the
course and contacting the	Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and
teacher	explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr),
	which will be answered as soon as possible (no later than five working days after receiving the e-mail).

1. GENERAL INFORMATION						
1.1. Course title	Modern traffic systems	1.8. Course code at ISVU	129846			
1.2. Course lecturer	Martina Ljubić Hinić	1.9. Course code at MOZVAG				
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45L+15S)			
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of Transport	<ul> <li>1.11. Level of e- learning application (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup></li> <li>level), percentage of on line course performance (max. 20%)</li> </ul>	1st			
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.			
1.6. Year of study	1 <sup>st</sup>	1.13. Modernization	X Yes 🗆 No			
1.7. Credit point (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20% □			

2. COURSE DESCRIPT	2. COURSE DESCRIPTION					
	The aim is to provide students with theoretical knowledge and case studies:					
	• define elements and branches of the transport system;					
	• learn the elements of the transport system;					
2.1. Course objectives	• understand the technical and technological characteristics of the traffic branches;					
	• acquire knowledge about the organizational features of the traffic branches and the complexity of the transport system;					
	• get to know the interdisciplinary approach to the transport system and transport processes;					
	• apply the learned content of this course to practice.					
2.2. Terms of course						
entry and required	Four-year secondary education completed; qualification level 4.2 according to the HKO.					
competences						
2.3. Learning outcomes	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional					
on the study programme	public in Croatian and English.					
level	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.					

	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.				
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.				
	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.				
	LO7: Apply computer tools for data analysis and comparison, and propose an optimal solution in the traffic process.				
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.				
	LO13: Follow trends in technology, technology and traffic safety.				
	Learning outcomes according to Bloom's taxonomy:				
2.4. Expected learning	1. to enumerate and explain the elements and branches of the transport system 1, 2				
outcomes on the course	2. to demonstrate knowledge and understanding of course content by defining and describing an interdisciplinary approach to the transport system 1, 2				
level	3. to describe, compare and relate the technical and technological characteristics of the branches of transport and modern transportation technologies 2, 4				
	4. to identify and evaluate the interdependence of the elements of the transport system 1, 6, 5				
	5. to use materials and tools to search scientific and professional literature in their native and English languages 3				
	6. to present the acquired knowledge, ideas, problems and solutions independently and in a team 3				

	Cons	tructive allignement				
2.5. Course content according to detailed curriculum schedule	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
	89.	Introduction into the course and detailed plan.	-	They listen to a lecture. During the individual work on the computer, they are introduced to the course content and documents on the e-learning page of the course.	-	1 h

		Elements of the transport system. Historical development of traffic.	1, 2, 4	Listen to lectures and read literature.	In colloquium or the written and oral exam they define the system and elements of the transport system and explain the interdisciplinary nature of the transport system, and state the historical development of the elements and branches of the transport system.	3 h
9	90.	Maritime transport.	1, 2, 3, 5	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or the written and oral exam they identify and explain the elements and technologies of maritime transport, and define and describe the role of technical and technological characteristics of maritime transport in the transport system.	4 h
9	91. Inland waterw		1, 2, 3, 5	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they specify and explain the elements and technologies of inland waterway transport, and define and describe the role of technical and technological characteristics of maritime transport in the transport system.	4 h
9	92.	Seaports. Transportation technologies.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they identify and explain the types and operation of seaports, and define, list and describe transportation technologies and explain the interdependence of all branches of transport. Seminar work is done in groups with discussion.	4 h
9	93.	Study trip (Rijeka port).	1, 2, 3, 4, 5, 6	They listen to a lecture.	In colloquium or written and oral exams they identify and explain seaports, and	8 h

				define and describe the role of seaports as collection points into which traffic flows from all traffic routes and means of transport of different branches of traffic.	
94. Road trans		1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they specify and explain the elements and technologies of road transport, and define and describe the role of technical and technological characteristics of road transport in the transport system. Seminar work is done in groups with discussion.	4 h
95.	Road transport.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they specify and explain the elements and technologies of road transport, and define and describe the role of technical and technological characteristics of road transport in the transport system. Seminar work is done in groups with discussion.	4 h
96.	Rail transport. 1st Colloquium	1, 2, 3, 4, 5, 6	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they specify and explain the elements and technologies of railway transport, and to define and describe the role of technical and technological characteristics of railway transport in the transport system. Seminar work in groups is prepared with discussion.	42 h
97.	Rail transport.	1, 2, 3,	They listen to a lecture and read literature.	In colloquium or written and oral exams	4 h

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technological	
ay transport in the	
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discussion.	
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air traffic, and	
e role of technical	4 h
racteristics of air	
system. Seminar	
with discussion.	
	4 h
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	minar work in discussion. n and oral exams ain the elements air traffic, and role of technical racteristics of air system. Seminar with discussion. n and oral exams ain the elements ostal traffic, and role of technical haracteristics of sport system. e in groups with n and oral exams ain the elements lecommunication describe the role

	101.	Pipeline transport. Cable car transport.	1, 2, 3, 4, 5, 6	They listen to a lecture and read In the course of the semi individually explore the conte topic area by searching the databat the basis of it and the read litera up with their own ideas, and way problems.	d literature. the dinar, they are a contract of this contract of this contract, and on a contract of the dinature, come the area of the dinature of the dinatu	n colloquium or written and on hey specify and explain the nd technologies of pipe ableway traffic, and de lescribe the role of technological characteristics of nd cableway traffic in the ystem. Seminar work is done with discussion.	e elements eline and efine and nical and of pipeline e transport	4 h
	102.	City traffic. Taxi traffic. 2nd Colloquium.	1, 2, 3,4, 5, 6	They listen to a lecture an individually for the colloquium.	nd prepare ti a d	n colloquium or written and on hey identify and explain the nd technologies of urban tran lefine and describe the role ransport in the transport system	e elements asport, and e of urban	42 h
	103.	Concluding considerations. Repeating and preparing for the exam.	6, 7	They listen to a lecture an individually for the exam.	nd prepare -			44 h
3. EVALUATION OF ST	FUDE	NT WORK						
<ul> <li>3.1. Students' obligations</li> <li>3.1. Students' obligations</li> <li>In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course:         <ul> <li>From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year;</li> <li>From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period;</li> <li>More than 50% - students have the right to take the final exam.</li> </ul> </li> <li>Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam).</li> </ul>							seminar the next held in ring the	
3.2. Monitoring student	Atter	ndance 1		Written exam 1 (with	hout colloquia)	Project		

work (enter the share of	Experimental work		Research			Practical work		
ECTS credits for each activity so that the total	Essay		Report			Continuous examination	1	
number of ECTS points corresponds to the credit	Colloquium	1 (without written exam)	Seminar paper	1		Other		
score of the course)	Class activity	1	Oral exam	1		Other		
3.3. Student workload	<ol> <li>Attendance 45 h</li> <li>Design of seminar v</li> </ol>	Il bases is 1 ECTS credit 30 semester hours and is estimated as: vork and presentation 15 h nid-term / midterm exam 120 h						
4. FORMATION OF GR	RADES							
	Element of evaluation	Bad			Satisfying	Abov	Above average	
	Organization	The paper is not organized in a logical order and lacks structure.		clear disti	s well structured with nction between t , the main body of t conclusion.	distinction betwee he main body of	structured with a clear en the introduction, the the text and the nich are logically	
4.1. Grading of seminar work	Terminology, writing style	Words and expressions low in line with official terminology. The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.		Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors.		logy and show an their meaning. The scellent, the sentences cise, the vocabulary is		
	Citing and referencing references	The sources are not i references do not fi show a cursory exploring the topic.	it the topic and	references a	tes are listed b and with errors. T re relevant to the top a satisfactory resear	he and consistently are appropriate, t	accurately, completely listed. The references heir list is "rich" and nd shows a detailed	

				attitude.		research ap	pproach.	
		Bad		Satisfying		I	Above average	
4.2. Grading of the colloguium / written and oral exam	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.			
	Active attendance	70-75% of the presence	76-86% of	the presence	87-100% of	f the presence	Case studies resolved	
		0 points	0 p	oints	0 p	oints	0 points	
	Seminar paper	2		3		4	5	
4.3. Forming the final grade according to the		Made and handed over	Made and	handed over	Made and	handed over	Made and handed over	
evaluation elements	Examination /	2		3		4	5	
	Written	50-64%	65-	80%	81-	-90%	91-100%	
	examination	25-32 points	33-40	points	41-45	5 points	46-50 points	
	Oral part of the	2		3		5	5	
	exam	25-32 points		points	41-45	5 points	46-50 points	
4.4. Formation of final	e .	ired knowledge, skills and teaching + final exam)	l competences	ompetences Number rating		ECTS grade		
grade based on absolute		90 - 100%		5 (excellent)		А		
distribution		80-89,9%		4 (ver	y good)		В	
		65 – 79,9%		3 (g	good)		С	

	60-64,9%	2 (sufficient)	Ι	)				
	50 - 59,9%	E						
5. ADDITIONAL INFORMATION ON THE SUBJECT								
5.1. Required literature (available in	Title		Number of copies in the library	Availability via other media				
the library and through other media)	<ol> <li>Cerovac, V.: Tehnika i sigurnost prometa; FPZ, Zagreb, Božičević, D., Kovačević, D.: Suvremene transportne tel</li> </ol>		3	No				
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	<ol> <li>12. Lectures</li> <li>13. Zelenika, R.: Prometni sustavi, Ekonomski fakultet u Rij</li> <li>14. Zelenika, R.: Multimodalni prometni sustavi, Ekonomski</li> <li>15. Sussman, J. : Introduction to Transportation Systems, 2000.</li> </ol>	3 0 0	No No Yes					
<ul><li>5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences</li><li>5.4. Informing about</li></ul>	records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association. It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of							
the course and contacting the teacher	classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).							

## PK-SP-2. Description of a new course an amended and/or changed or modernized course.

1. GENERAL INFORMA	TION ABOUT THE SUBJECT		
1.1. Title	Traffic and ecology	1.8. ISVU course code	201135
1.2. Lecturer	Tanja Radić Lakoš	1.9. MOZVAG course code	
1.3. Assistants and/or associates	None	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	Professional Undergraduate study of Traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Study year	1 <sup>st</sup>	1.13. Modernization	X yes 🗆 no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20%XMore than 20 %□

2. COURSE DESCRIPTIO	ON
2.1. Course objectives	<ul> <li>The aim is that student, based on theoretical knowledge and case studies, be able to:</li> <li>Define basic ecological and environmental concepts;</li> <li>Understand problems in their own environment (in traffic and / or in the work environment) to independently manage the environment in a way that minimally affects the state and components of the environment in terms of sustainable development;</li> <li>Learn to identify the damage that traffic or traffic system participants can cause to natural ecosystems;</li> <li>Apply the learned content of this course in business practice.</li> </ul>
2.2. Terms of course entry and required competences	Four-year high school education completed; having a qualification at level 4.2
2.3. Learning outcomes on the study programme	LO1. To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English.

level	LO3. To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions.							
	LO4. To apply knowledge from the field of natural and technical sciences to problems in road traffic.							
	LO6. To analyze and present relevant facts from the field of traffic needed to reach conclusions.							
	LO11. To identify, predict and propose solutions in road traffic technology and technique.							
	LO13. To track trends in the development of technique, technology and safety in traffic.							
	Learning outcomes towards Bloom's taxonomy: (up to two verbs per LO)	LO Level: 8. Recapture, 9. Understanding, 10. Application, 11. Analysis, 12. Evaluation, 13. Synthesis						
2.4. Expected learning	1. to demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts in ecology and environmental protection,	1, 1						
outcomes on the course level	2. to analyze and compare the relationship between man and his environment in the historical and contemporary context of traffic and traffic techniques development,	4, 2						
	3. It will also provide an example of road traffic impacts on natural ecosystems and parts of the environment (air, water and sea, soil, flora and fauna) and	2, 3						
	4. Give an example of measures how to reduce negative impacts of traffic on the environment,	3						
	5. Discuss and critically evaluate on the activity of traffic participants as well as traffic experts in accordance with the principles of sustainability and accountability,	4, 5						
	6. Use materials and tools to search scientific and professional literature in Croatian and in English,	3						
	7. Present accepted knowledge, ideas, problems and solutions independently and in the team.	6						

2.5. Course content	Cons	structive alignment				
according to detailed	No:	Thematic ensemble / Lecture	Course	<b>Content / Teaching Method</b>	Evaluation	Time
curriculum schedule	110.	Торіс	LO	Content / Teaching Methou		needed

	104.	Introduction to the course and a detailed performance plan	-	Listen to the lecture. On seminary teaching, by independent work on the computer students get acquainted with course content and documents on the e- learning course page.	-	2 h
		Fundamental Ecological principles.	1, 6, 7	Listen to the lecture and read the literature.	In a colloquy or written and oral exam students define fundamental ecological concepts. They describe the role of ecology as a science, describe the difference between ecology and environmental protection, define the role of Darwin. They know to sketch and explain the population growth in the ecosystem relative to the environmental capacity.	4 h
	105.	Ecological factors.	1, 6, 7	Listen to the lecture and read the literature.	In a colloquy or written and oral exam students can name, distinguish and give an example of an ecological factor.	4 h
	106.	Circulation of substances in the ecosystem. The role of energy in the Ecosystem.	1, 6, 7	Listen to the lecture and read the literature.	In a colloquy or written and oral exam students can define and describe the role of macro-elements in the environment, describe macro-elements cycles and explain the role of human impact in cycles of circling. In a colloquy or written and oral exam students can describe the role of solar energy for the functioning of the ecosystem, list members of the nutrition chain, and	4 h

1(	07.	Pollution and degradation of the environment. Traffic caused Environmental Degradation.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar student individually, in pairs or Socrates threes made mental map and solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	distinguish organisms with regard to the trophy. In a colloquy or written and oral exam students can define what environmental degradation is and how it comes to it, give an example of environmental degradation, analyse and conclude how environmental degradation occurs and compare how traffic causes degradation of the environment. Created mental map. Solved case study. In a colloquy or written and oral	10 h
10	08.	Pollution and air degradation. Anthropogenic climate change.	1, 5, 6, 7	Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a conoquy or written and oral exam students can define and describe the underlying concepts of air pollution, enumerate and distinguish natural and anthropogenic sources of air pollution, predict the effects of polluted air and the consequences of phenomena such as: greenhouse effect, global warming, climate change, acid rain, ozone depletion, analyse the impact of air pollution on the atmosphere, human health, plant and animal life and material heritage. Created and Presented seminar paper (by independent use of computer programs).	10 h

109.	Road motor vehicles as sources of air pollution	1, 3, 5, 6, 7	Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam they can define and describe types of ICE exhaust gases, give an example and interpret the impact of exhaust gas on motor vehicles on the air, human health and plant and animal life. Created and Presented seminar paper (by independent use of computer programs).	8 h
110.	View of mitigation and / or rehabilitation measures. The role of catalyser and λ- probe. Alternative fuels in road traffic.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam they can define and describe the material, role and mode of catalyser and $\lambda$ probes, enumerate and describe alternative fuels in road traffic, choose the most environmentally friendly and interpret the choice, analyse the use of vehicles with ICE in the contemporary context of technology development and science. Created and Presented seminar paper (by independent use of computer programs).	10 h
111.	Conventional energy sources. RES.	1, 4, 5, 6, 7	Listen to the lecture and read the literature. They use multimedia and network. Listen to the lecture and read the literature. At the seminar student individually explore the content of this	In a colloquy or written and oral exam they can define and describe the types of fossil fuels and RES and choose and comment on the most environmentally acceptable	4 h

				topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	solution. Created and Presented seminar paper (by independent use of computer programs).	
1	112.	Road traffic and energy consumption. Ecological efficiency in Traffic.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam students can define and describe ecological efficiency, to analyse and compare energy consumption in traffic in the historical and contemporary context, to propose and use measures to reduce energy consumption in road traffic and increase energy efficiency, critically evaluate the most appropriate solution. Created and Presented seminar paper (by independent use of computer programs).	6 h
1	113.	Pollution and degradation of water in road traffic. View of mitigation and / or rehabilitation measures.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar, students solve the case study.	In a colloquy or written and oral exam students can define and describe the basic concepts of pollution and degradation of water, to enumerate and distinguish natural and anthropogenic sources of water pollution, to predict the dynamics of water pollution along	8 h

		Pollution and degradation of the			roads and to propose mitigation and / or rehabilitation measures. Solved case study. In a colloquy or written and oral exam they can define and describe the underlying concepts of pollution and degradation of the	
1	114.	sea. Ballast water (environmental problem, treatment measures).	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar, students solve the case study.		8 h
1	115.	Soil pollution and degradation in road traffic. View of mitigation and / or rehabilitation measures.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. They use multimedia and network. Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	soil contamination, enumerate and differentiate the soil's natural and anthropogenic contaminants, predict the consequences of phenomena such as erosion, desertification, deforestation, analyse the impact of road traffic on the fragmentation of habitats and propose mitigation / remediation measures of the	1

					programs).				
	116.	Noise and vibration in road traffic.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam students can define and describe the underlying concepts of noise pollution, enumerate road noise sources, predict the effects of noise on human health and propose measures to reduce noise in and out of the vehicle. Created and Presented seminar paper (by independent use of computer programs).	6 h			
]		Ecologically acceptable forms of traffic.	1, 2, 3, 5, 6, 7	Listen to the lecture and read the literature.	In a colloquy or written and oral exam they can describe and critically evaluate the most environmentally acceptable form of traffic, analyse this choice in the historical and contemporary context of traffic technology, give an example of the impact of air and rail traffic on the environment.	6 h			
	118.	Concluding Considerations / Repeating and Preparing for Exam.		Listen to the lecture and individual preparation for the exam.	-	20 h			
3. EVALUATION OF ST	3. EVALUATION OF STUDENT WORK								
3.1. Students` obligations	In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquy seminar paper. Students who have during the course achieved:								

	academic year; From 25 – 49,9 in a regular or e More than 50% Students can pass the fir creating mental map, so participation in the less	<ul> <li>academic year;</li> <li>From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period;</li> </ul>							
	Attendance		Written exam	2 (by submitting both colloquiums the student is relieved of an written examination)	Project				
3.2. Monitoring student	Experimental work		Research		Practical work				
work (enter the share of ECTS credits for each	Essay		Report		Continuous examination				
activity so that the total number of ECTS points corresponds to the credit score of the course)	Colloquium	3 (by submitting both colloquiums the student is relieved of a written and oral examination)	Seminar paper	0,5	Other (inscribe)				
	Class activities	0,5	Oral exam	1 (by submitting both colloquiums the student is relieved of an oral examination)	Other (inscribe)				

	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:								
	Commitment				Hours (estimate)				
3.3. Student workload	11. Attending class	ses			45				
	12. Creating and P	resenting seminar pape	er		10				
	13. Preparation for	the Colloquium / example of th	m through self-s	study	65				
4. GRADING									
	Valuation Element         Poor				Satisfying		Above average		
	Organization	The paper is not organized in a logical order and its structure is lacking. The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion		clear distinction between the introduction, the main part of the		The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another			
4.1. Seminar paper grading	Terminology, writing style	Words and phras harmonized wit terminology. Writin appropriate, sentence modest vocabulary, and repeated mistakes.	th official g style is not es are too long,	officia style structu approg	ds and phrases are aligned with al terminology. The writing is appropriate, the sentence ture is clear, the vocabulary is opriate and has little matical errors.		Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.		
	Quoting and referencing	Sources are not specified at all. The references do not match the topic and show a superficial approach to the research topic.		and want	ources are listed, but incomplete nd with errors. The references are ppropriate for the subject and how a satisfactory research ttitude		Sources are accurate, complete and consistent. The references are appropriate, their list is "rich" and comprehensive and shows a robust research approach.		
	Poo	)r		Satis	fying		Above average		
4.2. Colloquium / exam	Give answer by m understanding. Does no	•			ns, without difficulty wledge, understands		Knowledge is at the level of analysis, synthesis and evaluation. It observes		
grading	apply the basic terms a				ns the terms and the	-	legitimacy, accurately and thoroughly		
	apply or explain the co	<b>^</b>				U	explains the content of the subject, and		

					conc that	epts that it er	ncapsulat inally g	ns the terms and tes. Find solutions tiven. There is a subjects.
	Active participation	70-75% of attendance		6-86% of attendance	87-100% of a	ttendance		ted mental map.
	in the lessons	2 points		4 points	7 poir	its		3 points
	Seminar paper	2		3	4			5
4.3. Creating a final grade	Seminar paper	5 points		7 points	8 poir	its		10 points
according to evaluation elements		2		3	4			5
ciements	Colloquium / written exam	50-64,9%		65-79,9%	80-89,	9%	90-100%	
	CAUII	25 points		30 points	35 points		40 points	
	Oral exam	2		3 5				5
	Orar exam	25 points		30 points	35 poi	nts	40 points	
	-	Percentage of adopted knowledge, skills and competences (teaching + final exam) Numerous grade					ECTS g	rade
4.4. Creating a final grade		90 – 100% 5 (excellent)					Α	
according to absolute		80 – 89,9% 4 (very good)					B	
allocation		<u>65 - 79,9%</u>		3 (good			C D	
		60 - 64,9%         2 (sufficient)           50 - 59,9%         2 (sufficient)					E E	
5. ADDITIONAL INFOR	MATION ABOUT TH	·						
5.1. Compulsory literature		Title						Availability via other media
(available in the library and through other media)	<ol> <li>European Parliament and Council of the European Union: "White Paper - A Single European Transport Space Platoon - A Road to a Comprehensive Transport System Resourcefully Managing Resources", COM (2011) 144final, 2011</li> </ol>							Available On-line

	2. Golubić, J., Promet i okoliš, FPZ, Zagreb, 1999.	5	Available On-line				
5.2. Additional literature (at the moment of	16. Radić Lakoš, T., Upravljanje okolišem, VUŠ, Šibenik, 2018. (selected chapters)		Available On-line				
changes and/or amended	17. Glavač, V., Uvod u globalnu ekologiju, Hrvatska sveučilišna naklada, Zagreb, 2001.	5					
of study programme)	18. Udovičić, B., Čovjek i okoliš, Kigen, Zagreb, 2009.	2					
	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By						
5.3. Quality assurance	keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and						
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be						
acquisition of knowledge,	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system:						
skills and competences	Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from						
	employers and Alumni association.						
	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any						
5.4. information on the	delay in teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the						
course and contact with	teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is						
the teacher	possible to ask questions by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no later						
	than five working days from the receipt of e-mail).						

7. GENERAL INFORM	MATION					
7.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	140773			
7.2. Course title	Traffic logistic	1.9. Course code in MOZVAG				
1.3. Assistants and/or	-	Forms of teaching (number of hours Lecturing +	(30 + 0 + 30 + 0)			
associates		Practical exercises + Seminars + e learning)				
1.4. Study programme	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup>	1 <sup>st</sup> , course materials are			
(specialist, undergraduate,		level), percentage of on line course performance (max.	on-line, 0%			
graduate)		20%)				
1.5. Course status	Optional	1.12. Number of course revisions	4			
(obligatory, optional)						
1.6. Year of study	$1^{\text{st}}, 2^{\text{nd}}$	1.13. Modernization	Yes			
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or	Less than 20% X			
		supplements	More than 20 %			
8. COURSE DESCRIP	TION					
2.1. Course objectives	The goal is to get students on the basis of theoretical know	vledge and case studies:				
	<ul> <li>learn about the elements of the logistics system,</li> </ul>					
	<ul> <li>identify and overcome logistical processes and activities that are related to storage, transportation, and traffic,</li> </ul>					
	<ul> <li>mastering the modern logistics concepts and strategies.</li> </ul>					
2.2. Terms of course entry	Enrolled 2 <sup>nd</sup> academic year, 4 year secondary education completed; qualification level 4.2 according to the CROQF.					
and required competences						
2.3. Learning outcomes	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional					
on the study programme	public in Croatian and English.					
level	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.					
	LO3: Independently and responsibly search, interpret and integrate relevant literature for decision making.					
	LO6: Analyze and present relevant facts from the traffic area required to reach conclusions.					
	IU9: Evaluate and organize processes in the field of road transport and/or transport logistics.					
	IU11: Identity, anticipate and propose solution technologi					
	LO12: Design a smaller transport process and critically ev					
	Learning outcomes by Bloom: (maximum 2 werbs for LO)       Level of LO:					
2.4. Expected learning			1 - memory,			

outcomes on the course						2 - understanding,	
level (4-10 learning						3 - application,	
outcomes)					4 - analysis,		
,						5 - evaluation,	
						6-synthesis.	
	1. Defi	ne and differentiate basic terms and	division	in logistics, warehousing, and freight forwarding	ng.	1, 2	
	2. Ana	lyze and extract information and co	mmunicat	ion technologies in transport logistics.		4, 2	
	3. Sele	ct, evaluate and categorize services	in the war	rehouse business.		3, 5	
		4. Compare and connect ways of transportation of products, organization of distribution and performance of city logistics.				4, 6	
	5. Prop	oose ways of doing urban logistics, l	handling o	of products and reduction of inventory costs.		6	
		6. Use materials and tools to search the scientific and professional literature in their native and English languages.			3		
	7. Pres	7. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.				6	
2.5. Course content	<b>a</b> 1						
according to detailed curriculum schedule	Const	ructive allignement					
according to detailed	No	ructive allignement Thematic unit	LO of	Content/teaching methods	Ev	aluation	Time
according to detailed		U	LO of the	Content/teaching methods	Ev	aluation	Time
according to detailed		U		Content/teaching methods	Ev	aluation	Time
according to detailed		U	the	Content/teaching methods Listening to the lecture. In the course of	Ev	aluation	Time
according to detailed	No	Thematic unit	the		Ev	aluation	Time
according to detailed	No	Thematic unit Introductory presentation	the	Listening to the lecture. In the course of	Ev	aluation	Time 2 h
according to detailed	No	Thematic unit Introductory presentation (introducing students to the	the	Listening to the lecture. In the course of seminars, they are introduced to the course	Ev	aluation	
according to detailed	No	Thematic unit Introductory presentation (introducing students to the	the	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning	Ev	aluation _	
according to detailed	No	Thematic unit Introductory presentation (introducing students to the	the	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working		aluation - uium or the written	
according to detailed	No 1.	Thematic unit         Introductory presentation         (introducing students to the course content and obligations)	the	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	At the colloq	-	
according to detailed	No 1.	Thematic unit         Introductory       presentation         (introducing students to the course content and obligations)         The term of logistics (term,	the	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature.	At the colloq and oral exa	- uium or the written	
according to detailed	No 1.	Thematic unit         Introductory presentation (introducing students to the course content and obligations)         The term of logistics (term, developmental factors, elements	the course -	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature. At the seminar class, they individually	At the colloq and oral exa how to defin	- uium or the written um, students know	2 h

			seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	development. Seminar paper created and presented (by computer programs).	
3.	(management, freight forwarders, FIATA documents, customs officers).	1, 6, 7	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students know how to define and distinguish the basic concepts in freight forwarding. Enumerate all freight forwarding jobs, distinguish between customs documents, human resources working in logistics. Seminar paper created and presented (by computer programs).	6 h
4.	(concept, types and division, the factors for determining the location, equipment and furnishing warehouses, methods of storage operations)	1, 3, 6, 7	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam students know how to define and differentiate the basic concepts of storage. Distinguish, describe and present warehouse equipment. Analyze and evaluate factors for determining location. Select, evaluate and categorize services in the warehouse business. List the rules and methods for storing goods. Seminar paper created and presented (by computer programs).	6 h

	_	XX7 1 1 1 (			A ( 1 11 1 (1 1)	
	5.	Warehousing and storage of	ucts (video films)	They use multimedia and network. They	At the colloquium or the written	
		products (video films)		listen to a lecture and read literature. At the	and oral exam, students can	
				seminar class, they individually explore the	distinguish, describe and present	
				content of this topic area by searching the	the warehouse equipment. Choose	
				database, and on the basis of it and reading	adequate racks and forklifts for	
				the literature, create a seminar paper that	the storage of products and	6 h
				presents the acquired knowledge and	internal transport. Seminar paper	
				presents their own ideas, and ways to solve	created and presented (by	
				problems. In group work at the seminar	computer programs).	
				class, the brainstorming method and the		
				discussion method on the topic are applied.		
	6.	Freight terminals and Freight-		They use multimedia and network. They	At the colloquium or the written	
		transportation centers (concept		listen to a lecture and read literature. At the	and oral exam, students can	
	and division, development goals of Freight-transportation center, functions, services, 3PL)		seminar class, they individually explore the	define the basic terms of the		
		of Freight-transportation center,	C 1	content of this topic area by searching the	Freight terminals and the Freight-	
		functions, services, 3PL)		database, and on the basis of it and reading	transportation centers. Distinguish	
				the literature, create a seminar paper that	between Freight-transport centers	6 h
				presents the acquired knowledge and	by size and location. Select and	
				presents their own ideas, and ways to solve	categorize services provided at	
				problems. In group work at the seminar	terminals and centers. Seminar	
				class, the brainstorming method and the	paper created and presented (by	
				discussion method on the topic are applied.	computer programs).	
-	7.	Information and communication		They use multimedia and network. They	At the colloquium or the written	6 h
		system in the function of		listen to a lecture and read literature. At the	and oral exam, students can	
		logistics (elements, methods of		seminar class, they individually explore the	distinguish between information	
		communication, modern		content of this topic area by searching the	and communication technologies	
		computer programs, warehouse	2, 6, 7	database, and on the basis of it and reading	in logistics, warehouse	
		management system)	<i>, , , , .</i>	the literature, create a seminar paper that	management system, Bar code	
				presents the acquired knowledge and	technology, and RFID	
				presents their own ideas, and ways to solve	identification. Identify the	
				problems. In group work at the seminar	abbreviations of information and	
				problems. In group work at the seminar	abore futions of information and	

0	Information and communication		class, the brainstorming method and the discussion method on the topic are applied. They use multimedia and network. They	communicationtechnologies.Establish the difference, strengthsand the weakness of using it.Seminar papercreated andpresented(bycomputerprograms).At the colloquium or written and	6 h
8.	Information and communication system in the function of logistics (video films)	2, 6, 7	listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	oral exam, students know how to define and describe the Bar code technology, RFID identification, voice technology, and technology Pick to light. Establish the difference, strengths and the weakness of using it. Seminar paper created and presented (by computer programs).	6 h
9.	Inventory management and manipulation with products (inventory planning and control, supply chain, packaging of goods, palletization and containerization)	5, 6, 7	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	and describe Supply Chain and	6 h
10.	Transportation in the logistics system (road, rail, air and	2, 4, 6, 7	They listen to a lecture and read literature. At the seminar class, they individually	At the colloquium or the written and oral exam, students know	6 h

	pipeline transport, inland		explore the content of this topic area by	how to distinguish transport	
	waterways transport, transport		searching the database, and on the basis of	modes in logistics, in all branches	
	costs, transport documents)		it and reading the literature, create a	of traffic. Identify the advantages,	
			seminar paper that presents the acquired	disadvantages and costs of	
			knowledge and presents their own ideas,	transportation. Seminar paper	
			and ways to solve problems. In group work	created and presented (by	
			at the seminar class, the brainstorming	computer programs).	
			method and the discussion method on the		
			topic are applied.		
1	1. Modern transport technologies		They use multimedia nad network. They	At the colloquium or the written	6 h
	in transport logistics (conditions		listen to a lecture and read literature. At the	and oral exam, students know	
	for development, integral		seminar class, they individually explore the	how to isolate and analyze	
	transport, technologies on the		content of this topic area by searching the	transport technologies in logistics	
	road, rail, water, and air		database, and on the basis of it and reading	in the road, rail, water, and air	
		2, 4, 6,	the literature, create a seminar paper that	transport. Compare, identify	
		7	presents the acquired knowledge and	similarities/differences in the	
			presents their own ideas, and ways to solve	transportation of products with	
			problems. In group work at the seminar	modern transportation	
			class, the brainstorming method and the	technologies. Seminar paper	
			discussion method on the topic are applied.	created and presented (by	
				computer programs).	
1	2. Distribution and ordering of		They use multimedia and network. They	At the colloquium or the written	6 h
	goods (concept, purpose, and		listen to a lecture and read literature. At the	and oral exam, students can	•
	structure of the distribution		seminar class, they individually explore the	define the terms of order and	
	system, distribution networks,		content of this topic area by searching the	distribution. Propose the ways of	
	costs in distribution term of the		database, and on the basis of it and reading	orders in case of missing	
	order, processes in ordering)	4, 6, 7	the literature, create a seminar paper that	products. Determine the	
	stati, processes in ordering,		presents the acquired knowledge and	difference between physical	
			presents their own ideas, and ways to solve	distribution and distribution	
			problems. In group work at the seminar	channels. Compare and explain	
			class, the brainstorming method and the	distribution network concepts.	
			class, the brainstorning method and the	distribution network concepts.	

			discussion method on the topic are applied.	Identify distribution costs.	
				Seminar paper created and	
				presented (by computer	
				programs).	
13.	<ul> <li>City logistics (concept, task, and goal of city logistics, initiatives, the structure of city logistics system, optimization of logistics flows)</li> </ul>	4, 5, 6, 7	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the concept and the goal of city logistics. Distinguish and isolate participants in city logistics. Categorize flows of products in city logistics. Identify means of transport. Suggest city logistics concepts. Identify the advantages and disadvantages of optimizing the flow of products.	6 h
				Seminar paper created and presented (by computer programs).	
	. Study trip to LIDL Logistics- distribution center (located in Perušić).	1, 3, 4, 5		On a study tour, students will be able to define and differentiate basic terms and divisions in logistics, warehousing, and freight forwarding. Select, evaluate and categorize services in the warehouse business. Compare and connect modes of product transport, organization of distribution of products. Suggest ways of manipulation with the products and reducing inventory costs.	8 h

	15. Final conside	erations/Repeating	,	They listen to a course le	ecture and prepare			40 h
	and preparing t	for the exam.	- 1	individuals for the exam.		-		
9. EVALUATION OF S	STUDENT WORK							
3.1. Student obligations	least 70%. Part-time st papers. Students who credits, and must re-en exam (test). Written ex final exam. Students ca	a accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at ast 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar apers. Students who have achieved during the course: from $0 - 24,9\%$ ECTS credits- are rated F (unsuccessful) and cannot earn ECTS redits, and must re-enroll in the next academic year; from $25 - 49,9\%$ - are assessed by FX (insufficient) and must pass and pass the written (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the nal exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of udents (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).						
3.2. Student work monitoring (enter the	Attending classes	1		Written exam	1 (without colloqiums)	Project		
share of ECTS credits for	Experimental work			Research		Practical work		
each activity so that the	Esaay			Report		Continuous check		
total number of ECTS credits corresponds to the	Colloquiums	1 (without writted exam)	en part of	Seminar paper	0,5	(other)		
course credit value)	Teaching activities	1		The oral part of exam	0,5	(other)		
3.3. Student work-load	and presentation (16 ho			0 semester hours and is a rm/exam through self-stu		ce (60 hours), prepara	ation of semina	ır work
4. FORMATION OF STU	r	-	_	~ .		· · -		
4.1. Evaluation of seminar paper	Elements of evaluation	Ba	d	Satis	sfying		e average	
	Organization	The paper is not logical order structure.	-	cks clear distinction	ain body of the text	distinction between	n the introducti the text an	ion, the
	Terminolog, writing style	Words and expression in line w terminology. Th	vith offic	cial official terminolog	ions are in line with y. The writing style sentence structure is	e official terminolo	ogy and sho	ow an

	Citing and referencing references	is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors. The sources are not listed at all. The references do not fit the topic and show a cursory approach to exploring the	clear, the vocabulary and there are few gram The sources are listed and with errors. The relevant to the topi satisfactory research at	l but incomplete e references are c and show a	are clear and con rich and there are The sources are and consistently are appropriate,	xcellent, the sentences cise, the vocabulary is no grammatical errors. accurately, completely listed. The references their list is "rich" and nd shows a detailed
		topic.	satisfactory research at	tillude.	research approach	
4.2. Gradeing of the colloquium/written and		Bad	Satisfyi	ng		ve average
oral exam	It responds by memory,	without a deeper understanding.	It reproduces the bas	ic concepts and	Knowledge is at the level of analysis,	
	It does not know or app	ply basic terms and concepts. It	without difficulty imparts new		synthesis, and evaluation. It observes the	
	does not know how to	apply or explain the contents of	knowledge, understands the material,		legality, accurately and thoroughly	
	the course with example	S.	explains the terms and concepts that it		explains the content of the material, and	
			supports with examples.		logically connects and explains the	
						ts that it supports with
					*	solutions that were not
					originally given. It notes correlation	
		I.		1	with related mater	
4.3. Forming the final grade according to the	Active attendance on class	70-75% attendance	76-86% attendance	87-100%	attendance	Mental map created, Case studies resolved
evaluation elements		2 points	4 points	7 p	oints	3 points
	Sominor popor	2	3		4	5
	Seminar paper	5 points	7 points 8 p		ooints	10 points
		2	3		4	5
	Colloquiums/ Written part of exam	50 - 64,9%	65 - 79,9% 80 -		89,9%	90 - 100%
	withen part of exam	25 points	30 points 35 p		points	40 points

		2	3	5	5
	Oral part of exam	25 points	30 points	35 points	40 points
4.4. Formation of the final	Percentage of acqu	ired knowledge, skills and	Numerical grade	EC	TS grade
grade based on the	competencies	(teaching + final exam)			
absolute distribution	9	0 - 100%	5 (excellent)		А
	8	0 - 89,9%	4 (very good)		В
	6	5 - 79,9%	3 (good)		С
	6	0 - 64,9%	2 (sufficient)		D
	5	0 - 59,9%	2 (sufficient)		Е
<b>5. ADDITIONAL INFOR</b>	MATION ABOUT COU	IRSE			
5.1. Compulsory literature		Title		Number of copies in	Availability via
(available in the library				the library	other media
and via other media)	Ivakovic C., Stankovic I	R., Šafran M.: Freight Forwarding	and Logistics Processes,	-	City of Sibenik
	· .		Zagreb, 2010 (selected chapters)		library
	1 0	nt-transport Centers, Faculty of Tr	ransportation Sciences,	-	PDF (Internet
	University of Zagreb, 20	· · · ·			website)
	e e e e e e e e e e e e e e e e e e e	ystems, University of Rijeka, Fac	ulty of Economics, Rijeka, 2005	2	
	(selected chapters)				
	<b>e e</b>	s, MATE, Zagreb School of Econ	omics and Management, Zagreb,	-	City of Sibenik
	2006 (selected chapters)			library	
5.2. Additional literature	U	lectures and seminars on the e-L	earning system of the		e-learning system
(at the moment of	Polytechnic of Sibenik f				City of Sibenik
changes and/or amended	2001.	systems, University of Rijeka, Fac	culty of Economics, Rijeka,		library
of study programme)		ad fusisht formunding husiness. I	Lainanaite of Dijalas Essentia of		City of Ciboril
	Economics, Rijeka, 200	nd freight forwarding business, U		City of Sibenik	
	Logistics <u>www.logistika</u>				library Internet website
5.3. Quality assurance	•		n of necessary knowledge and sk	ille will be answered through	
methods that ensure the			asses and provided information or	ų į	•
methous that ensure the		nce and student activity during cl	asses and provided information of	i students progress unougr	i short conoquiums and

acquisition of knowledge,	homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be
skills and competences	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system:
	Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from
	employers and Alumni association.
5.4. Informing about the	It is the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of
course and contacting the	classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the
course lecturer	Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and
	explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address name@vus.hr),
	which will be answered as soon as possible (no later than five working days after receiving the e-mail).

1. GENERAL INFORMA	1. GENERAL INFORMATION						
1.1. Course title	Transshipment resources I	1.8. Course code at ISVU	187602				
1.2. Course lecturer	Ana-Mari Poljičak	1.9. Course code at MOZVAG					
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+30+30+0)				
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> 0%				
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.				
1.6. Year of study	2 <sup>nd</sup>	1.13. Modernization	X Yes 🗆 No				
1.7. Credit point (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20% □				

2. COURSE DESCRIPTION	ON
2.1. Course objectives	<ul> <li>The goal is to provide students with theoretical knowledge:</li> <li>Distinguish between types of transshipment resources;</li> <li>Understand the principle of continuous operation of transhipment machinery and set an example for application in business practice;</li> <li>Calculate the efficiency of uninterrupted handling equipment;</li> <li>Learn how to choose uninterrupted handling equipment based on the type of goods.</li> </ul>
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.
2.3. Learning outcomes	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
on the study programme level	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.         LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.

	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.							
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.							
		1 - memory,						
		2 - understanding,						
	Learning outcomes according to Bloom's taxonomy:							
		4 - analysis,						
2.4. Expected learning		5 - evaluation,						
outcomes on the course		6 – synthesis.						
level	1. state the division of goods according to the technical suitability for transport and transhipment and list the physical							
	and technical characteristics of the goods,	1						
	2. to sketch and comment on continuous operation transhipments,	3, 4						
	3. calculate the productivity of individual continuous-action transhipment means,							
	4. recommend loading and unloading means depending on the type of goods and productivity.	5						

	Constructive allignement							
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time		
2.5. Course content according to detailed curriculum schedule	119.	Introduction into the course and detailed plan.	-	They listen to a lecture. During the individual work on the computer, they are introduced to the course content and documents on the e-learning page of the course.	-	1 h		
	119.	Basics of transverse mechanization.	1	Listen to lectures and read literature. In seminar classes, they are introduced to the methodology of writing seminar papers. They choose the topic of seminar papers. The brainstorming method and the method	oral exam they indicate the types of transhipment according to the degree of mechanization and automation.	7 h		

			of discussing the topic discussed are	according to the technical suitability	
			applied in the seminar teaching. In the exercise classes, they repeat the units and formulas needed to calculate the productivity of the handling equipment.	for transport and transhipment and state the physical and technical characteristics of the goods. They define and sketch the bulk angle. They list the types of continuous handling machine productivity.	
120.	Belt conveyors. Band conveyor belts.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral examination know enumerate characteristics and sketch the belt conveyor and explain its components. Give an example application. List and explain the types of tape belt conveyors. Specify and sketch the shape of the carrier surfaces of the conveyor belts. They know how to calculate the productivity of belt conveyors.	10 h
121.	Drums and rollers of belt conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral examination know enumerate and explain the role of drums. Sketch the conveyor belt drive with one, two and three drive drums. List and sketch the types of rollers by design and shape. They know how to calculate the productivity of belt conveyors.	10 h

122.	Devices for loading and unloading.	2, 3, 4	They listen to a lecture and read literature At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral examination know state, outline and explain the role of loading-unloading device. Seminar paper created (presented by computer programs). They know how to calculate the required belt width for a belt conveyor. They know how to calculate the productivity of belt conveyors.	9 h
123.	Screw conveyors.	2, 3, 4	They listen to a lecture. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam knows outline and explain the role of screw conveyors, and state its advantages and disadvantages. Give an example application. They know how to calculate the productivity of belt conveyors	8 h
124.	Screw conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are	At the colloquium or written and oral examination know enumerate and outline the forms of screw transporters and specify for which type of materials are used. Sketch and explain the principle of operation of the worm conveyor for piece goods. Seminar paper created (presented by computer	7 h

			2, 3, 4	applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods. They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by	programs). Do they calculate the productivity of screw conveyors. At the colloquium or the written and oral exam they can define the elevators	
	125.	Elevators. Colloquium I.		searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	and specify and explain the types of elevators. Sketch and explain the principle of operation of the elevator. List and sketch the types of buckets and elements for the transfer of piece goods. They know how to calculate the productivity of an elevator.	8 h
1	126.	Pneumatic conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam knows specify types of pneumatic conveyors, outline and explain their working principle. Seminar paper created (presented by computer programs). They know how to calculate the productivity of pneumatic conveyors.	8 h
1	127.	Sectional conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by	At the colloquium or the written and oral examination they can state the characteristics of the sectional	8 h

			searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	conveyors and sketch and explain their working principle. Seminar paper created (presented by computer programs). They know how to calculate the productivity of sectional conveyors.	
128.	Vibrating conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or the written and oral exam they can state the characteristics of oscillatory conveyors, explain their working principle and sketch them. Seminar paper created (presented by computer programs). They know how to calculate the productivity of vibrating conveyors.	9 h
129.	Vibrating conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the	The colloquium or written and oral exam knows specify characteristics of vibratory conveyors, to explain their working principle and sketch them. Seminar paper created (presented by computer programs). They know how to calculate the productivity of vibrating conveyors.	9 h

130.	Gravity conveyors.	2, 3, 4	productivity of the conveyor by analytical methods. They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or the written and oral exam they can define gravity conveyors, explain the principle of operation and state their advantages and disadvantages. Explain the principle of operation of a straight gravity slide and sketch it. Seminar paper created (presented by computer programs). They know how to calculate the productivity of gravity conveyors.	8 h
131.	Gravity conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or the written and oral exam they can explain the principle of work of the gravity slider, indicate the performances and sketch them. Indicate the types of gravity rollers and explain their working principle. Give an example application. Seminar paper created (presented by computer programs). They know how to calculate the productivity of gravity conveyors.	8 h
132.	Conveyors scrapers. Colloquium II.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar	The colloquium or written and oral examination know explain the working principle and sketch conveyor scraper. Give an example application. Explain what redlers are. They know how to	8 h

	Concludi	ng considerations.	The brainstorming of discussing the applied in the ser exercise classes,	he acquired knowledge. method and the method topic discussed are ninar teaching. In the they calculate the conveyor by analytical	•	ity of a scraper			
		g and preparing for	They listen to a individually for the	lecture and prepare exam.	-		32 h		
3. EVALUATION OF ST	UDENT WORK								
3.1. Students` obligations	least 70%. Part- paper. Students • From academi • From 2 regular • More t Writing a semin course of teach	<ul> <li>In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: <ul> <li>From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year;</li> <li>From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period;</li> <li>More than 50% - students have the right to take the final exam.</li> </ul> </li> <li>Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two colloquium); b) during class (active participation in class and passing exams (written and oral part of the exam).</li> </ul>							
3.2. Monitoring student	Attendance		Written exam	3 (without colloquia)	Project				
work (enter the share of ECTS credits for each	Experimental work		Research		Practical work				
activity so that the total number of ECTS points	Essay		Report		Continuous examination	1			
corresponds to the credit	Colloquium	3 (without written exam)	Seminar paper	0,5	Other				

score of the course)	Class activity	0,5	Oral exam	1(without colloquia)	Other	
	Student workloa	d on all bases is 1 ECTS credi	t 30 semester hours and	d is estimated as:		
	Obligation			Hours (estimated)		
3.3. Student workload						
	14. Active class attendance			90		
	15. Preparing colloquia or exams through individual work			60		

## 4. FORMATION OF GRADES

	Element of evaluation	Bad		Satisfying		Above average
	Organization	The paper is not of logical order and lack	-	The paper is well structured clear distinction between introduction, the main body text and the conclusion.	n the	The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion, which are logically interconnected.
4.1. Grading of seminar work	Terminology, writing style	Words and expression with official terms writing style is not a sentences are too lon vocabulary and with repeated grammatical	ninology. The appropriate, the ag, of a modest a frequent and	Words and expressions are with official terminology, writing style is appropriat sentence structure is clear vocabulary is appropriate and are few grammatical errors.	The te, the tr, the	Words and expressions are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
	Citing and references	The sources are not listed at all. T references do not fit the topic a show a cursory approach exploring the topic.		The sources are listed but incomplete and with errors. The references are relevant to the topic and show a satisfactory research attitude.		The sources are accurately, completely and consistently listed. The references are appropriate, their list is "rich" and comprehensive and shows a detailed research approach.
4.2. Grading of the						
colloguium / written and	Bae	d	Satisfying		Above average	
oral exam						

	It responds by memor understanding. Does basic terms and conce how to apply or explai course with examples.	not know or apply epts. Does not know	difficulty understan	aces the basic concepts and imparts new kno ads the material, explains the pts that it supports with exa	without wledge, ne terms amples.	Knowledge is at the level of analysis synthesis and evaluation. It observes the legality, accurately and thoroughly explain the content of the material, and logically connects and explains the terms and concepts that it supports with examples Finds solutions that were not originally given. It notes correlations with related material.		
	Active attendance	70-75% of the presence	76-	86% of the presence	87-100%	of the presence	Case studies resolved	
		2 points		4 points	,	7 points	10 points	
1.2 Forming the final	Seminar paper	2	3		4		5	
4.3. Forming the final grade according to the evaluation elements	Seminar paper	5 points	7 points		8 points		10 points	
	Examination / Written examination	2	3		4		5	
evaluation ciefficities		50-64,9%	65-79,9%		8	0-89,9%	90-100%	
	Crammation	25 points	30 points		35 points		40 points	
	Oral part of the exam	2	3		4		5	
	-	25 points	30 points		35 points		40 points	
		uired knowledge, skills				E	CTS grade	
	<b>^</b>	(teaching + final exam)	<u> </u>		95 5			
4.4. Formation of final		$\frac{90-100\%}{1000}$		5 (excellent)		A		
grade based on absolute distribution		<u>80 - 89,9%</u>		4 (very good	)		B	
distribution		<u>15 - 79,9%</u>		3 (good)			C	
		$\frac{60-64,9\%}{60-59,9\%}$		2 (sufficient) 2 (sufficient)			D E	
5. ADDITIONAL INFOR							L	
5.1. Required literature		Т	ïtle			Number of copies	•	
(available in the library						the library	other media	

and through other media)	7. Mavrin I. : Transporteri, Fpz, Zagreb, 1999.	-				
	8. Bognolo, D., Kršulja, M.: Prekrcajna sredstva, Zbirka riješenih zadataka, Veleučilište u	3				
	Rijeci, Rijeka 2017. (selected chapters)	3				
5.2. Supplementary						
literature (at the time of	19. Ljubetić J. : Prekrcajna sredstva s neprekidnim djelovanjem – Zbirka slika i tablica,					
the submission of changes	Rijeka, 2002.	-				
and / or additions to the	20. Šćap D.: Prenosila i dizala, FSB, Zagreb, 2004.	-	Available online			
study program)						
5.3. Quality assurance	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping					
methods that ensure the	records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will					
acquisition of knowledge,	provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their					
skills and competences	rights and obligations as well as working methods and required literature. Quality assurance syst	em indicators: Student	survey, monitoring of			
skins and competences	CES annual data on annual employment status of students, employer survey and Alumni Association.					
	It is the responsibility of each student to be regularly informed about the course, the coursework	, and the classroom act	ivities. All notices of			
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning sit	e of the course and or	n the website of the			
course and contacting the	Polytechnic. Students can contact teachers during the consultation period (at least one hour	per week), while for	short questions and			
teacher	explanations they can be contacted during class. It is also possible to ask questions by e-mail (f	rom the official e-mail	address at @ vus.hr),			
	which will be answered as soon as possible (no later than five working days after receiving the e-	mail).				

1. GENERAL INFORMA	1. GENERAL INFORMATION							
1.1. Course title	Transshipment resources II	1.8. Course code at ISVU	140776					
1.2. Course lecturer	Ana-Mari Poljičak	1.9. Course code at MOZVAG						
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)					
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> 0%					
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.					
1.6. Year of study	2 <sup>nd</sup>	1.13. Modernization	X Yes 🗆 No					
1.7. Credit point (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20% □					

2. COURSE DESCRIPTIO	ON
2.1. Course objectives	<ul> <li>The goal is to provide students with theoretical knowledge:</li> <li>Describe and distinguish between basic features and performance of transshipment mechanization with periodically action;</li> <li>Understand the application and purpose of transshipment mechanization with periodically action;</li> <li>Apply the learned content of this course in business practice.</li> </ul>
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.
2.3. Learning outcomes	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
on the study programme level	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.

		Level of LO:
		1 - memory,
2.4. Expected learning	Learning outcomes according to Bloom's taxonomy:	2 - understanding,
	(maximum 2 werbs for LO)	3 - application,
	(indxinium 2 werbs for EO)	4 - analysis,
outcomes on the course		5 - evaluation,
level		6-synthesis.
	1. sketch and select the required elements of the crane,	4, 3
	2. distinguish and propose types of cranes with regard to the scope,	2, 6
	3. calculate the productivity of transshipment mechanization with periodically action,	3
	4. define and calculate the number of pallets and containers required.	1, 3

	Constructive allignement								
2.5. Course content according to detailed curriculum schedule	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time			
		Introduction into the course and detailed plan.	-	They listen to a lecture. During the individual work on the computer, they are introduced to the course content and documents on the e-learning page of the course.	-	1 h			
	134.	Crane operating class.	2, 3	They listen to a lecture and read literature. In the exercise classes, they are introduced to the calculation of the productivity of transshipment mechanization with periodically action and to calculate the productivity by the analytical method.	At the colloquium or the written and oral they can state and explain the crane classes and calculate theoretical and exploitative productivity.	2 h			
	135.	Crane elements.	1, 2, 3	They listen to a lecture and read literature. In the exercise classes, they solve numerical tasks and determine the classes of cranes by	At the colloquium or written and oral examination knows enumerate, differentiate and sketch elements of	3 h			

			analytical method.	cranes, and identify a class of cranes.	
136.	Ropes and steel ropes.	1, 3	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks by analytical method, which determine the parameters for classifying cranes.	At the colloquium or written and oral examination knows list and describe the types of ropes and choose the rope they need. List and explain ways of fixing steel ropes. Calculate the parameters for classifying cranes.	3 h
137.	Hooks.	1, 3	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks for the hydraulic crane using the analytical method.	At the colloquium or the written and oral exam they can state, describe and sketch the types of hook, calculate the dangerous cross-section of the hook and calculate the required pressure in the cylinder of the hydraulic crane.	3 h
138.	Chain. Grippers.	1, 3	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks for the hydraulic crane using the analytical method.	At the colloquium or written and oral examination know state, explain, outline the types of chains and give a practical example. They know how to list, describe and sketch types of catchers and give practical examples. Calculate the required force at the end of the drive lever and the piston diameter.	3 h
139.	Pulleys.	1, 3	They listen to a lecture and read literature. In the exercise classes, they solve numerical tasks for manipulative vehicles by analytical method.	At the colloquium or the written and oral exam they can explain the task of the pulley, specify the types of pulley, sketch the performances of the pulley in practice, and calculate the load capacity of the forklift, the pressure in the cylinder and the lifting time.	4 h

1	140.	Repetition and preparation for the colloquium.	1, 2, 3	They listen to a lecture and read literature. They prepare individually for the	-	22 h
1	141.	Colloquium I. Brakes.	1, 3	colloquium. They listen to a lecture and read literature. In the exercise classes, they solve numerical tasks for manipulative vehicles by analytical method.	At the colloquium or the written and oral exam they can explain the task of the brakes, indicate the types and give an example from practice. Sketch and explain two- and one-pedal brakes. Calculate cylinder pressure and lifting time of forklift truck.	4 h
1	142.	Brakes.	1, 3	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks with the use of pallets by analytical method.	At the colloquium or written and oral exam knows outline and explain conical, belt and lamellar brakes. Calculate the required number of flat pallets.	3 h
1	143.	Division of the crane. Design of small cranes.	1, 2, 3, 4	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks with the use of pallets by analytical method.	At the colloquium or written and oral examination know indicate small and large cranes. Sketch and explain small cranes and give practical examples. Calculate how much goods can stack on a flat pallet.	4 h
1	144.	Large cranes.	1, 2, 3, 4	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks with the use of pallets by analytical method.	They can group large cranes at a colloquium or a written and oral exam. Sketch and explain large cranes. Explain the difference between borders and cranes. Give an example from practice. Calculate the required number of box pallets and how many goods are in the box pallets.	5 h
1	145.	Universal manipulative	4	They listen to a lecture and read literature.	The colloquium or written and oral	3 h

		vehicles. Forklifts, loaders		In the teaching of exercises, they solve	exam knows specify and define	
		and small towing vehicles.		numerical tasks with the use of containers	universal manipulative vehicles. Give	
				by analytical method.	the forklift division and give an	
					example from practice. Explain	
					loaders, enumerate and describe small	
					towing vehicles and give practical	
					examples. Calculate the number of	
					containers required.	
	146.	Pallets and containers.	4	They listen to a lecture and read literature. In the teaching of exercises, they solve	At the colloquium or the written and oral exam they can define and list the types of pallets and containers and	3 h
	140.		-	numerical tasks with the use of containers by analytical method.	give practical examples. Calculate container control number.	5 11
	147.	Repetition and preparation for the colloquium. Colloquium II.	1, 2, 3, 4	They listen to a lecture and read literature. They prepare individually for the colloquium.	-	22 h
	148.	Concluding considerations. Repeating and preparing for the exam.		They listen to a lecture and prepare individually for the exam.	-	35 h
3. EVALUATION OF ST	UDEN	T WORK				
	In ac	cordance with the Rulebook on	Study and	the Rulebook on Student Assessment and Eval	luation: for all full-time students attendance	ce of at
	least	70%. Part-time students are rec	juired to a	ttend a class of at least 50%. All students must	t create, present and positively colloquy s	eminar
	pape	r. Students who have achieved c	luring the	course:		
		• From 0 - 24.9% of ECTS	credits -	they are rated F (unsuccessful) and cannot ea	rn ECTS credits and must re-enroll in th	ne next
3.1. Students` obligations		academic year;				
5.1. Students obligations			•	(insufficient) and must pass and pass the writte	en exam (test). Written exam (test) can be	held in
		regular or extraordinary exar	<b>.</b> .			
		• More than 50% - students h		-		
				in two ways: a) during the course of teaching the	0	-
	parti	cipation in classes and two coll	loquium);	b) during class (active participation in class a	and passing exams (written and oral part	of the

	exam).					
	Attendance		Written exam	3 (without colloquia)	Project	
3.2. Monitoring student work (enter the share of	Experimental work		Research		Practical work	
ECTS credits for each activity so that the total	Essay		Report		Continuous examination	
number of ECTS points corresponds to the credit	Colloquium	3 (without written exam)	Seminar paper		Other	
score of the course)	Class activity	0,5	Oral exam	0,5 (without colloquia)	Other	
	Student workload on a	ll bases is 1 ECTS credit	30 semester hours and	is estimated as:		
3.3. Student workload	Obligation			Hours (estimated)		
5.5. Student workload	16. Active class a	attendance		45		
	17. Preparing col	loquia or exams through	individual work	75		
4. FORMATION OF GRA	ADES					
4.1. Grading of seminar work	-					
	H	Bad	Sat	sfying	Above	e average
4.2. Grading of the colloguium / written and oral exam	understanding. Does basic terms and con	ory, without a deeper not know or apply cepts. Does not know lain the contents of the	difficulty imparts understands the mate	ic concepts and without new knowledge, erial, explains the terms upports with examples.	Knowledge is at the level of analysis synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples Finds solutions that were not originally given. It notes correlations with related material.	
4.3. Forming the final	Active attendance	70-75% of the	76-86% of the	presence 87-100	% of the presence	Case studies resolved

grade according to the		presence					
evaluation elements		2 points		4 points	7	points	10 points
	Examination / Written	2		3		4	5
	examination / written	50-64,9%		65-79,9%	80	)-89,9%	90-100%
	CXammation	25 points		30 points	3:	5 points	40 points
	Oral part of the exam	2		3		4	5
	Oral part of the exam	25 points		30 points	3:	5 points	40 points
		ired knowledge, skills		Number		ECTS	grade
		$\frac{1000}{1000}$		Number rating			•
4.4. Formation of final		0-100%		5 (excellent)			A
grade based on absolute		0-89,9%		4 (very good)		B	
distribution		65 - 79,9%			3 (good)		
		60 - 64,9%			2 (sufficient)		D
	5	2 (sufficient)			E		
5. ADDITIONAL INFOR	RMATION ON THE SUB	JECT					
		T	itle			Number of copies	Availability via
5.1. Required literature		1.	nie			in the library	other media
(available in the library	9. Šćap D.: Prenosi	la i dizala, FSB, Zagrel	b, 2004. (s	elected chapters)		-	Available online
and through other media)		imjeri riješenih zadatal sti, Zagreb, 1994. (sele	-	neta pretovarna mehanizacija, ers)	Fakultet	-	
5.2. Supplementary	1			,			
literature (at the time of							
the submission of changes	21. Serdar J.: Prenos	21. Serdar J.: Prenosila i dizala, Leksikografski zavod "M. Krleža", Zagreb, 1995.					
and / or additions to the							Available online
study program)							

5.3. Quality assurance	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping
methods that ensure the	records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will
	provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their
acquisition of knowledge,	rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of
skills and competences	CES annual data on annual employment status of students, employer survey and Alumni Association.
	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the
course and contacting the	Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and
teacher	explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr),
	which will be answered as soon as possible (no later than five working days after receiving the e-mail).

1. GENERAL INFORMA	1. GENERAL INFORMATION ABOUT THE SUBJECT							
1.1. Name of the course	Economics of traffic	1.8. ISVU course code	P-213					
1.2. Lecturer	Dijana Mečev	1.9. MOZVAG course code						
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)					
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of Traffic	<ul><li>1.11. Level of e- learning application (1st, 2nd,</li><li>3rd level), percentage of on line course</li><li>performance (max. 20%)</li></ul>	1 st level – materials available on- line, 0%					
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1					
1.6. Study year	2 <sup>nd</sup>	1.13. Modernization	□ yes X no					
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20%XMore than 20 %□					

2. COURSE DESCRIPTION	2. COURSE DESCRIPTION								
2.1. Course objectives	The main objective of the course is to provide students with the skills and abilities to understand main economic relationships and processes in the transport system.								
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.								
2.3. Learning outcomes	O2: To organize and implement team work, and critically judge the opinions and attitudes of team members.								
on the study programme	LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions.								
level	LO5: To apply basic legal and economic principles in organization with socially responsible management in technical-t	echnological subjects.							
2.4. Expected learning outcomes on the course level	Learning outcomes towards Bloom's taxonomy: (up to two verbs per LO)	LO Level: 14. Recapture, 15. Understanding, 16. Application, 17. Analysis, 18. Evaluation,							

						Synthesis	
	<ul> <li>To explain the basic features of transport economics and the transport market from a macro point of view</li> <li>To explain the basic features of transport economics and the transport market from a micro point of view</li> <li>To relate the incurrence of transport costs, prices of transport services and performance indicators of transport companies</li> <li>To develop a seminar paper in which the business operations of the transport industry are elaborated</li> </ul> <b>Constructive alignment</b>						
	no.	Thematic ensemble / Lecture Topic	Course LO	Content / Teaching Method	Evaluation		Time needed
		Introduction into the course and detailed plan.	-	Listen to the lecture. By independent work on the computer students get acquainted with course content and documents on the e- learning course page.	-		1 h
2.5. Course content according to detailed curriculum schedule		Characteristics of transport economics and transport market.	1, 2	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and students can: define and describ concepts of transport economi the characteristics of the transp differentiate transport need from service; give examp complementarity and competing the transport branches.	be the basic cs; explain port market; m transport les of	2 h
	150.	Economic sense and practical importance of transport division	1,2	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and	In colloquium or written and students can enumerate the m and criteria for the division of They can explain how transp division of labor and specializa can use critical thinking to e importance of accessibility o	hain factors f transport. port affects ation. They explain the	4 h

			ideas, discuss issues.	services.	
15	51. The role and impact of transport on economic development	1,2	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams students can explain the role of transport in the circulation in macroeconomics. They can explain how traffic affects production and how it functionally links factors of production.	4 h
15	<ul><li>52. Creating revenues from transport services and the impact of prices on the demand for transport services</li></ul>	1, 5	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams students can explain the value structure of the transportation service. They know how to analyze the price / demand ratio for transportation. They know how to sketch and explain the curve of total income.	4 h
15	53. Transport cost analysis.	2,3,4	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they can explain main trasport costs. They differentiate costs with respect to capacity utilization. They know how to calculate the selling price of a transport service.	4 h
15	54. Costs.	2,3	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of	In colloquium or written and oral exams they are able to define the characteristics of transport infrastructure. They know how to list and explain major revenue instruments for financing road	4 h

			proviously acquired tracy lades and	infrastructure. They know how to list and	1
			previously acquired knowledge and	infrastructure. They know how to list and	
			presenting adopted knowledge and	explain the main sources of revenue for road construction.	
			ideas, discuss issues.	road construction.	
155.	Tariffs and tariff systems.	2,3	Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they can define the term tariffs in transport. They can define and explain factors that affect the amount and ormation of tariffs.	6 h
156.	Business Performance Criteria (1).	2,3,4	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they know how to calculate and interpret net profit margins, ROA, ROE.	6 h
157.	Business Performance Criteria (2).	2,3,4	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they know how to calculate and interpret productivity and economy performance indicators.	6 h
158.	Transport Services Market	1,2	Listen to the lecture and read the literature. Use multimedia and	In colloquium or written and oral exams	4 h

			network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and	they know how to define supply / demand of transport services. They are able to explain specifics of the transport services market.	
			presenting adopted knowledge and ideas, discuss issues.		
159.	Consumer and manufacturer behavior.	1, 2	Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they know how to explain <i>manufacturers</i> ' <i>behavior</i> , based on the principle of profit maximization. They know how to explain customers behavior based on the principle of <i>benefit maximization</i> .	4 h
160.	Market structures (1)	1,2	Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they can define perfect competition. They can define and explain market failures. They know how to define a monopoly and explain the reasons why it occurs. They are able to distinguish between monopoly and perfect competition.	4 h
161.	Market structures (2)	1,2	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and	In colloquium or written and oral exams they can define oligopoly and explain how it occurs. They can define monopolistic competition. They are able to distinguish between perfect and monopolistic competition.	4 h

					presenting adopted	e				
					ideas, discuss issues					
	162.	Economic polic market.	y and the	2,5,6	Listen to the lectur literature. Discuss seminar student ind pairs solve case presenting the app previously acquired presenting adopted ideas, discuss issues	issues. At the lividually or in studies thus ropriateness of knowledge and knowledge and	they can	uium or written and state and explain neasures of transpor	n the most	3 h
	163.	Concluding Cor Repeating and F Exam.			Concluding Con Repeating and Prepa	siderations / aring for Exam.				30 h
3. EVALUATION OF STUDENT WORK										
<ul> <li>In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquium seminar paper. Students who have during the course achieved: <ul> <li>From 0 - 24,9% ECTS credits- is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year;</li> <li>From 25 - 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period;</li> <li>More than 50% ECTS credits - students have the right to access the final exam of the subject.</li> </ul> </li> <li>Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the lessons, solving case studies, creating and presenting the seminar paper) and passing two colloquia); b) during the course (active participation in the lessons).</li> </ul>										
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total		ndance	,		Written exam	2 (by submittin colloquiums the is relieved of an examination)	ng both e student	Project		

number of ECTS points	Experimental work		Research			Practical work
corresponds to the credit	Essay	Report				Continuous
score of the course)	Losdy		Report			examination
		2 (by submitting				
		both colloquiums the				
	Colloquium	student is relieved of	Seminar paper	0,5		
		a written and oral				
		examination)				
				1 (by	submitting both	
	Class activities	0,5	Oral exam	colloquiums the student is relieved of an oral		
				exami	ination)	
	The student's workloa	ad on all bases amounts t	to 1 ECTS point for 30 h	ours of	work per semester ar	nd is estimated as:
3.3. Student workload	Commitment				Hours (estimate)	
	18. Attending c	lasses		45		
	19. Creating and Presenting seminar paper				10	
	20. Preparation for the Colloquium / exam through self-study				35	
4. GRADING						

	Valuation Element	Poor	Satisfying	Above average	
4.1. Seminar paper grading	Organization	The paper is not organized in a logical order and its structure is lacking.	The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion.	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another	
88	Terminology, writing style	Words and phrases are low harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent	official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is		

		and repeated mistakes.	grammatical	grammatical err	ors.		ary is rich and there are no atical errors.	
	Quoting and referencing	Sources are not specific references do not m and show a superfic- the research topic.	natch the topic	Sources are list and with errors. appropriate for show a sati attitude.	. The references	are consiste and appropr arch compret	are accurate, complete and ent. The references are iate, their list is "rich" and hensive and shows a robust approach.	
	Poor			Satisfying		Above average		
4.2. Colloquium / exam grading	understanding. Does no apply the basic terms a	he basic terms and concepts (Cannot		basic terms, without and eva ansfers new knowledge, accurat subject matter, explains the notions that substantiate by solution		evaluation. It urately and tho he subject, and terms and cond itions that are p	edge is at the level of analysis, synthesis iluation. It observes legitimacy, ely and thoroughly explains the content ubject, and logically links and explains ns and concepts that it encapsulates. Find ns that are not originally given. There is a tion with correlative subjects.	
	Active participation in the lessons	70-75% of attendance	76-86%	of attendance	of attendance 87-100% of atte		Solved case study.	
	the lessons	2 points	4	4 points 7 p		oints	3 points	
	Sominor popor	2		3 4		Ļ	5	
4.3. Creating a final grade according to evaluation	Seminar paper	5 points 7		points 8 points		vints	10 points	
elements	0.11 : / ://	2	3		4		5	
	Colloquium / written exam	50-64,9%	65-79,9%		80-89,9%		90-100%	
	Chuin	25 points	30	30 points		oints	40 points	
	Oral exam	2		3		5	5	
	Utal Exalli	25 points 30		0 points 35		oints	40 points	
4.4. Creating a final grade according to absolute	Percentage of adopted knowledge, skills a competences (teaching + final exam)		und	nd Numerous grade			ECTS grade	

allocation	90 - 100%	5 (excellent)	А
	80-89,9%	4 (very good)	В
	65 - 79,9%	3 (good)	С
	60-64,9%	2 (sufficient)	D
	50-59,9%	2 (sufficient)	Е

## 5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature	Title	Number of copies in the library	Availability via other media		
(available in the library and through other media)	<ol> <li>Bukljaš Skočibušić M., Radačić Ž., Jurčević M. (2011). "Ekonomika prometa." Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb. (selected chapters)</li> <li>Perić T., Radačić Ž., Šimulčik D. (2000). "Ekonomika prometnog sustava." Prometni fakultet Sveučilišta u Zagrebu, Zagreb. (selected chapters)</li> </ol>	4 2			
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Baričević, H. (2003). "Promet i turizam." VŠTM, Šibenik.	24			
	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By				
5.3. Quality assurance	keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and				
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be				
acquisition of knowledge, skills and competences	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.				
	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any				
5.4. Information on the	delay in teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the				
course and contact with	teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It				
the teacher	is possible to ask questions by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no				
	later than five working days from the receipt of e-mail).				

4. GENERAL INFORMATION						
1.1. Course lecturer	Ivana Beljo	1.8. Course code in ISVU	140769			
1.2. Course title	Operational research in traffic	1.9. Course code in MOZVAG				
1.3. Assistants and/or associates	Želimir Mikulić	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)			
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	<ul> <li>1.11. Level of e- learning application (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup></li> <li>level), percentage of on line course performance (max. 20%)</li> </ul>	1 <sup>st</sup> , course materials are on-line, 0%			
1.5. Course status(obligatory, optional)	Obligatory	1.12. Number of course revisions	2			
1.6. Year of study	2 <sup>nd</sup>	1.14. Modernization	Yes			
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20%X□More than 20 %□			
2. COURSE DESCRIPTION	ON					
2.1. Course objectives	2.1. Course objectives Getting acquainted with the various types of problems that arise in business decision making. Adopting knowledge and skills of the analytical way of thinking, and the logical way of concluding and interpreting the results in further education. The aim of the course is to familiarize and teach students how to use the methods in order to solve certain problems in business decision making and to use methods for optimizing such problems.					
2.2. Terms of course entry and required competences	4 year secondary education completed; qualification level 4.2 according to the CROQF.					
2.3. Learning outcomes on the study programme level	LO 1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English, LO 4: To apply knowledge from the field of natural and technical sciences to problems in road traffic, LO 7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process, LO 8: To solve problems in traffic by using analytical and / or graphical methods.					

2.4. Expected learning outcomes on the course level	26. t 27. t 28. t 29. t 30. t	Level of       1- ren         2- una       2- una         Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO)       3- app         4-ana       5-eval         6-symt       2         26. to formulate the problem from practice as a suitable mathematical model       2         27. to solve optimization problem with graphical method       2         28. to apply computer tools for solving linear programming problem and to recommend optimal solution,       2         29. to choose the appropriate algorithm and to solve network problems,       3         30. to apply critical path method in the project management.       2         Constructive allignement       2						
	<b>no</b>	Thematic unit Introduction into the course and detailed plan.	LO of the course	Content/teaching methods Listen to lectures. Work independently on computer, get to know course content and elearning documents.	Evaluation		Time 2 h	
2.5. Course content according to detailed curriculum schedule	165.	Linear Programming Problems	1,3	Listen to lectures and read literature. Work independently on a computer solve tasks.The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written students know how to mode linear programming and to so of linear programming using recommend the optimal solut	the problem of blve the problem g the Solver and	4 h	
	166.	Linear Programming Problems. Graphical solution	1, 2	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written a students know how to n programming problem and and solve an optimization pro	nodel a linear sketch a graph	3 h	

1	167.	Simplex Method. Sensitivity Analysis, Postoptimality Analysis, Shadow prices. Modeling Integers	1, 2, 3	Listen to lectures and read literature. Work independently on a computer solve tasks.The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to model the linear programming problem and solve the problem with the simplex method.	3 h
1	168.	The Transportation Problem.	1, 2, 3	Listen to lectures and read literature. Work independently on a computer solve tasks. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to define and describe the transport problem, distinguish between open and closed transport problem., and set the model.	3 h
1	169.	Northwest corner rule, Minimum prices method, Vogel's approximation method, Russel's approximation method	1, 2	Write the colloquium.	In colloquium or written and oral exams students know how to solve the transportation problem using the northwest corner rule, minimum prices method, and Vogel's and Russel's approximation methods.	3 h
1	170.	Method for the Transportation Problem, The Assignment Problem.	1, 2, 3	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	Na kolokviju ili pismenom i usmenom ispitu znaju riješiti transportni problem i problem asignacije. In colloquium or written and oral exams students know how to solve the transport problem and the assignment problem.	3 h
1	171.	Revision for colloquium. Colloquium. Network.	1, 2, 3, 4	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	-	20 h
1	172.	Network andGraph,NetworkoptimizationModels.TheShortest-PathProblem,The	4	Listen to lectures and read literature. The exercises demonstrate how to solve	In colloquium or written and oral exams students know how to define and describe networks, graphs, and network resolution	4 h

	Minimum Spanning Tree Problem		tasks. Solve exercises.	methods, and use the appropriate algorithm to solve the minimum spanning tree and shortest path problem.	
173.	The Maximum Flow Problem, The Minimum Cost Flow Problem	4	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to solve the problem of maximum flow and minimum cost flow using an appropriate algorithm.	3 h
174.	Project menagement with PERT/CPM.	4, 5	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to apply the critical path method in project management.	4 h
175.	Dynamic Programming.	5	Listen to lectures and read literature. Work independently on a computer solve tasks. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to describe the application of dynamic programming to solve optimization problems.	2 h
176.	Stochastic Dynamic Programming.	5	Listen to lectures and read literature. Work independently on a computer solve tasks. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to to describe the application of stohastic dynamic programming to solve optimization problems.	2 h
177.	Approach to Problem Analysis, The Model Selection Criteria and Method of Solving Problems. Revision for colloquium. Colloquium.	4, 5	Write the colloquium.	-	20 h
178.	Revision	-	Listen to lectures and read literature.	-	20 h

3. EVALUATION OF STUDENTS` WORK										
3.1. Students` obligations	<ul> <li>formulae list. Studen</li> <li>from 0 - 24,</li> <li>from 25 - 44 or extraordi</li> <li>more than 5</li> <li>Students can take the statement of the st</li></ul>	<ul> <li>attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list. Students who have during the course achieved: <ul> <li>from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year;</li> <li>from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period;</li> <li>more than 50% - students have the right to take the final exam.</li> </ul> </li> <li>Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students factive participation in classes and through two colloquia); b) by passing the exam (written and oral part of the exam).</li> </ul>								
3.2. Monitoring student	Attendance	0,5	Written exam	2 (without colloquia)	Project					
work (enter the share of	Experimental work		Research		Practical work					
ECTS credits for each activity so that the total	Essay		Report		Continuous examination	0,5				
number of ECTS points corresponds to the credit score of the course)	Colloquium	2 (without written exam)	Seminar paper		Other					
score of the course)	Class activity	0,5	Oral exam	0,5	Other					
3.3. Student workload	<ul> <li>Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as:</li> <li>7. Attending classes and exercises 45 hours</li> <li>8. Preparing colloquia or exams through individual work 65 hours</li> </ul>									
4. GRADING SYSTEM										
4.1. Grading seminar papers										

	Unsatisfac	tory		Satisfactory			Above aver	age	
4.2. Grading colloquia/ written and oral exam	understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the		withou knowle explain	Reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with examples.			Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts supported with examples. Finds solutions that were not originally given. Notes correlations with related material.		
	Active course	70-74,9% c		75-79,9% of		,9% of		-100% of	
	attendance	attendance	e	attendance	atter	dance	at	tendance	
	attendance	2 points		5 points	10 p	points	2	0 points	
4.3. Final grade according	Calle and / Waittan	2		3	4		5		
to evaluation elements	Colloquia/ Written exam	50-64,9%		65-79,9%	80-89,9%		90-100%		
	CAUIT	25 points		30 points	35 points		40 points		
	Oral exam	2		3		5		5	
	Orarexam	25 points		30 points	35 points		4	0 points	
	Percentage of acquired knowledge, skill competences (teaching + final exam			Numerical grade			ECTS grade		
4.2 Final and a coordina	90 -	100%		5 (excellent)			А		
4.3. Final grade according to absolute division	80 -	89,9%		4 (very g	good)		Η	3	
	65 –	79,9%		3 (goo	od)		(	C	
	60 -	64,9%		2 (satisfa	ctory)		Ι	)	
	50 -	59,9%		2 (satisfa	ctory)		H	Ξ	
5. ADDITIONAL COURS	E INFORMATION								
5.1. Compulsory literature (available in the library and via other media)				tle			Number of copies in the library	Availability via other media	
una via outor modiaj	Pašagić, H., Ivanković, H	B., Kapetanović, N	V., Mate	matičke metode u prome	tu, Zagreb, 2	.004.	3		

			1					
	(selected chapters)							
	Lukač Z., Neralić L. : Operacijska istraživanja, Element 2013. (selected chapters)							
5.2. Additional literature								
(at the moment of changes	Neralić, L., Uvod u matematičko programiranje 1, Zagreb, 2012. (selected chapters)							
and/or amended of study	Hillier F., Lieberman G. : Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed. (se	elected chapters)						
programme)								
	ne control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By							
5.3. Quality assurance	teeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and							
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the e	efficiency of their	r work. Students will be					
acquisition of knowledge,	informed about their rights and obligations as well as the methods of work and the required literatu	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system:						
skills and competences	Student survey, monitoring of annual data from the Croatian employment service on the annual st	tate of student em	ployment, surveys from					
	employers and Alumni association.							
	It is the responsibility of each student to be regularly informed about the course, the coursework, a	and the classroom	activities. All notices of					
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning site of the cou	urse and on the we	ebsite of the Polytechnic.					
course and contacting the	Students can contact teachers during the consultation period (at least one hour per week), while for sh	ort questions and	explanations they can be					
teacher	contacted during class. It is also possible to ask questions by e-mail (from the official e-mail addres	s at @ vus.hr), wl	hich will be answered as					
	soon as possible (no later than five working days after receiving the e-mail).							

5. GENERAL INFORM	IATION							
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	187599					
1.2. Course title	English language II	1.9. Course code in MOZVAG						
1.3. Assistants and/or associates	Assistant	<ul><li>1.10. Forms of teaching (number of hours Lecturing</li><li>+Practical exercises + Seminars + e learning)</li></ul>	(30+15+0+0)					
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of traffic	1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%)	1 <sup>st</sup> , course materials are on-line, 0%					
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1					
1.6. Year of study	1 <sup>st</sup>	1.13. Modernization	Yes					
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20%X□More than 20 %□					
2. COURSE DESCRIPTION	ON							
2.1. Course objectives	The aim of the course is to expand the vocabulary related to road and postal traffic as well as predicted grammatical structures that include tenses, the adjective comparison, adverbs, modal verbs, transformation of direct into reported speech in the present. The aim is also to expand the vocabulary related to traffic, while exercises determine and practice grammar and new vocabulary. Another goal of the course is to write							
2.2. Terms of course entry and required competences	Completed course English language I							
2.3. Learning outcomes on the study programme level	professional public in Croatian and English	h, interpret and integrate the relevant literature needed to m						

	Lear	<b>ning outcomes</b> accroding to the B	loom`s taxon	omy: (up to two verbs per LO)		Level of LO: 1- rememberi 2- understand 3- application 4-analysis, 5-evaluation, 6-synthesis	ding, n,
				rofessional terminology of English	road traffic in English	2, 3 3	
		32. to apply grammatical structures in texts and assignments					
		o interpret and use tenses in real-lit o develop an essay within the topic				3, 4	
		o present own ideas for developme				3, 0	
		6					
		o compare and evaluate different tr	5	e subjects of the course, to express on as		5	
	38. t	o analyse medium complex texts a	nd solve task	S		4	
	39. t	o use part of the general language of	competency a	at levels B1		6	
	Cons	structive allignement					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	n	Time
2.5. Course content according to detailed curriculum schedule	179.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-		2 h
curriculum schedule	180.	CARS` ANATOMY - Adjectives and their formation	1, 2, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written the applied grammatical texts and tasks are evalual apply and link terms from terminology of English use them in writte	l structures on ated, understand, the professional road traffic and	4 h

				communication verb tenses are interpreted in a real linguistic context, use part of other language competences at B1 level.	
181.	MANAGEMENT IN TRAFFIC - Adverbs and their formation	1, 2, 3, 4, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
182.	In the train – expressing present	1,2, 3, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve	4 h

				tasks, use part of other language	
				competences at B1 level.	
				In colloquium or written and oral exams	
				the applied grammatical structures on	
				texts and tasks are evaluated, verb tenses	
				are interpreted in a real linguistic context,	
				can communicate in foreign languages	
	MODERN		Listen to lectures and read	within the course topic, express their own	
183.	TRANSPORTATION	1, 2,3, 6,	literature. Use multimedia and	opinions, present their own ideas related	4 h
	(HYDROFOILS) – Modal	9	internet. Solve exercises.	to the development of transport solutions	
	verbs			to develop a longer essay within course	
				topics, comparing and evaluating different	
				solutions in the traffic of other countries,	
				analyze medium complex texts and solve	
				tasks, use part of other language	
				competences at B1 level.	
				In colloquium or written and oral exams	
				the applied grammatical structures on	
				texts and tasks are evaluated, verb tenses	
				are interpreted in a real linguistic context,	
				can communicate in foreign languages	
		1 2 2 5	Listen to lectures and read	within the course topic, express their own	
184.	RAIL TRAFFIC IN EUROPE	1, 2, 3, 5,	literature. Use multimedia and	opinions, present their own ideas related	4 h
	<ul> <li>Expressing habit</li> </ul>	6, 9	internet. Solve exercises.	to the development of transport solutions	
				to develop a longer essay within course	
				topics, comparing and evaluating different solutions in the traffic of other countries.	
				analyze medium complex texts and solve	
				tasks, use part of other language	
				competences at B1 level.	

185.	Traffic in the USA – Tenses	1,2, 3, 5, 6, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
186.	Traffic for tomorrow – Tenses, Kolokvij	1, 2, 3, 5, 6, 9	Listen to lectures and take part in discussion. Write the colloquium.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
187.	Hovercraft – Indirect speech	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on	6 h

					texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different	
					solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language	
					competences at B1 level.	
	188.	Magnetic levitation trains – Personal and reflexive pronouns	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises. Discuss.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
	189.	Steam engine cars – Future tenses	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context,	10 h

				can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
190.	Post office and their role in the progress of mankind – Future tenses	1,2, 3, 4, 5, 6, 7, 8, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
191.	Climate changes and telecommunication	1,2, 3,4, 5, 6, 7, 8, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own	4 h

			their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
192.	Sattellites	1,2, 3,4, 5, 6, 7, 8, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
193.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions	10 h

3. EVALUATION OF STU						to develop a longer es topics, comparing and e solutions in the traffic analyze medium compl tasks, use part of competences at B1 level	of other countries, ex texts and solve other language		
3. EVALUATION OF STO									
3.1. Students` obligations	attendance of at lease during the course c attention being paid for homework. Of p successfully passes exam consists of a presentation creation eventual postponem	st 70% is required. Part lasses. Special consider to the student's active particular importance for both exams, he / she is written and an oral pa n, etc. The obligation	t-time studen ration is giv participation or the final of exempted fir rt. Ways to of each stu published o	nts are requirents are requirents to the studient in teaching evaluation are some the write check learned dent is to re- n the web similar	red to attend classes at ident's evaluation duri as well as his/her pre e the two written test en part of the final ex ing outcomes are: ess gularly inform onese te of the Polytechnic o	ssessment and Evaluation t least 50%. The students` ing the course of the teach sentation of the written w is that students take durin am and is obliged to take ays, objective type assign about the course. All no of Šibenik and the e-learn e are also available.	acquired knowledge ching process, with york that the student g the semester. If th the oral exam only. nments, discussion, notices about mainter	e is tested particular produces he student The final roleplay, enance or	
3.2. Monitoring student	Attendance	0,5	Written e	xam	1 (without colloquia)	Project			
work (enter the share of	Experimental work		Research			Practical work			
ECTS credits for each activity so that the total number of ECTS points	Essay		Report			Continuous examination			
corresponds to the credit score of the course)	Colloquium	1 (without written exam)	Seminar J	paper		Other			
score of the course)	Class activity	0,5	Oral exam	n	1	Other			
3.3. Student workload	9. Attending c	Class activity       0,5       Oral exam       1       Other         Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as:       9.       Attending classes and exercises 45 hours         10. Preparing colloquia or exams through individual work 45 hours       45 hours							

4. GRADING SYSTEM							
4.1. Grading seminar papers	-						
	Unsatisfactory		Satisfact	ory		Above average	
4.2. Grading colloquia/ written and oral exam	Responds by memory, we deeper understanding. It know or apply basic te concepts. Does not know apply or explain the contex- course with examples.	Does not erms and w how to	without difficulty impart understands the mater	rts new knowledge,	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts supported with examples. Finds solutions that were not originally given. Notes correlations with related material.		
	Active course attendance	70-	-75% of attendance	76-86% of	attendance	87-100% of attendance	
			3 points	7 po	oints	20 points	
	Seminar paper						
4.3. Final grade according to evaluation elements	.		2	3	3	4	
to evaluation ciements	Colloquia/ Written exam		50-64,9%	65-79,9%		80-89,9%	1
	ן 	1	25 points	30 points		35 points	1
	Oral exam	1	2	3	3	4	1
	Orai exam	1	25 points	30 pc	oints	35 points	
	Percentage of acquire competences (tea			Numerical grade	2	ECTS grade	
4.3. Final grade according	· ·	- 100%		5 (excellent)		А	
to absolute division		- 89,9%		4 (very good)		В	
		- 79,9%		3 (good)		С	
		- 64,9%		2 (satisfactory)		D	
	50 -	- 59,9%		2 (satisfactory)		E	

5. ADDITIONAL COURS	SE INFORMATION							
5.1. Compulsory literature	Title	Number of copies in the library	Availability via other media					
(available in the library and via other media)	Katja Bošković Gazdović: "English textbook of Transport I", Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	Х					
5.2 Additional literature (at the moment of changes and/or amended of study programme)	<ul> <li>Tamara Polić: "The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students", Veleučilište u Rijeci, Prometni odjel, 2007.</li> <li>Adrian Pilbeam and Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010</li> <li>A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University</li> <li>A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University</li> <li>A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University</li> </ul>	10	X (elearning, handouts)					
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.							
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursew classes or possible adjournment will be published in a timely manner on the e-learning site of the Students can contact teachers during the consultation period (at least one hour per week), while be contacted during class. It is also possible to ask questions by e-mail (from the official e-main as soon as possible (no later than five working days after receiving the e-mail).	he course and on the we	ebsite of the Polytechnic. nd explanations they can					

6. GENERAL INFORM	IATION							
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	140784					
1.2. Course title	English language IV	1.9. Course code in MOZVAG						
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(15+30+0+0)					
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	Indergraduate professional study of traffic 1.11. Level of e- learning application (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> level), percentage of on line course performance (max. 20%) 1 <sup>st</sup> , course materials are on-line, 0%						
1.5. Course status (obligatory, optional)	Obligatory	bligatory     1.12. Number of course revisions     1						
1.6. Year of study	2 <sup>nd</sup>	1.13. Modernization	Yes					
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20%X□More than 20 %□					
2. COURSE DESCRIPTION	ON							
2.1. Course objectives	The aim of the course is to expand the vocabulary related to road and postal traffic as well as predicted grammatical structures that include tenses, the relational and causative sentences, sequence of tenses, word formation, usage of abbreviations in business English. The aim is also to expand the vocabulary related to traffic, while exercises determine and practice grammar and new vocabulary. Another goal of the course is							
2.2. Terms of course entry and required competences	Completed course English language III							
2.3. Learning outcomes on the study programme level	professional public in Croatian and English	LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions						
	Learning outcomes accroding to the Bloom	n`s taxonomy: (up to two verbs per LO)	Level of LO: 1- remembering,					

	40. t v 41. t 42. t 43. t 43. t 45. t 45. t 46. t 47. t 48. t	$\begin{array}{c} 2 \text{- understand} \\ 3 \text{- application} \\ 4 \text{- analysis,} \\ 5 \text{- evaluation,} \\ 6 \text{- synthesis} \\ \hline 2, 3 \\ \hline 3, 4, 6 \\ \hline 3, 4 \\ \hline 5, 6 \\ \hline 3 \\ \hline 6 \\ \hline 5 \\ \hline 4 \\ \hline 6 \\ \end{array}$	n,				
	Cons	structive allignement Thematic unit	LO of the course	Content/teaching methods	Evaluation		Time
2.5. Course content	194.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-		2 h
2.5. Course content according to detailed curriculum schedule	195.	Early Trading Conditions – Tenses CV – Europass template	1, 2, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and applied grammatical structur tasks are evaluated, underst link terms from the professio of English road traffic and use and oral communication interpreted in a real linguise part of other language com level.	es on texts and and, apply and nal terminology e them in written verb tenses are tic context, use	4 h

196.	Travel And Traffic Information - The Sequence Of Tenses	1, 3, 4, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
197.	Public Transport - Direct And Indirect Speech - Statements Past	1, 3, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
198.	Transport And Tourism - Direct And Indirect Speech – Questions Past	1, 3, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the	4 h

				development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
199.	Tehnological Advances In The Twenty-First Century - Direct And Indirect Speech - Commands, Requests, Advice Past	1, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
200.	The History Of The Motor Car	1, 3, 5, 6, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h

201.	The World Of Transport - I Kolokvij	1, 3, 5, 6, 9	Listen to lectures and take part in discussion. Write the colloquium.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
202.	Professionalism In The Public Sector - Defining Relative Clauses	1, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
203.	America On Wheels - Non- Defining Relative Clauses	1, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises. Discuss.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the	6 h

				development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
204.	The History Of Railways - Connective Relative Clauses	1, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
205.	The Telephone Of Today And Tomorrow - Business Letters – Abbreviations In Business English	1,2, 3, 4, 5, 6, 7, 8, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h

206.	The Modern Wonder Of Electronics - Business Letters – Job Intervju	1,2, 3,4, 5, 6, 7, 8, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
207.	Problems Of Modern Transportation	1, 3,4, 5, 6, 7, 8, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	6 h
208.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the	10 h

	development of transport solutions to develop	
	a longer essay within course topics,	
	comparing and evaluating different solutions	
	in the traffic of other countries, analyze	
	medium complex texts and solve tasks, use	
	part of other language competences at B1	
	level.	

## 3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time stude attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tere during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with partice attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student product for homework. Of particular importance for the final evaluation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the written part of the final exam and is obliged to take the oral exam only. The f exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, rolep presentation creation, etc. The obligation of each student is to regularly inform oneself about the course. All notices about maintenance eventual postponement of teaching will be published on the web site of the Polytechnic of Šibenik and the e-learning page of the course, whall the information on the course as well as the teaching materials and the list of literature are also available.									
3.2. Monitoring student	Attendance	0,5	Written exam	1 (without colloquia)	Project					
work (enter the share of	Experimental work		Research		Practical work					
ECTS credits for each activity so that the total number of ECTS points	Essay		Report		Continuous examination					
corresponds to the credit score of the course)	Colloquium	1 (without written exam)	Seminar paper		Other					
score of the course)	Class activity	0,5	Oral exam	1	Other					
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 11. Attending classes and exercises 45 hours 12. Preparing colloquia or exams through individual work 45 hours									
4. GRADING SYSTEM										

4.1. Grading seminar papers	 _						
	Unsatisfactory		Satisfact	ory		Above avera	ige
4.2. Grading colloquia/ written and oral exam	deeper understanding. I know or apply basic te concepts. Does not know	Responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.		out a not and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with su examples.even even event event terms		Knowledge is at the level of analysis, synthesis evaluation. Observes the principles, accurately thoroughly explains the content of the material, logically connects and explains the terms and con- supported with examples. Finds solutions that were originally given. Notes correlations with re- material.	
	Active course attendance	70-	-75% of attendance	76-86% of	attendance	87-1009	% of attendance
	Active course attenuance		3 points	7 ро	ints	2	20 points
	Seminar paper	l		1			
4.3. Final grade according to evaluation elements	,		2	3	3		4
to evaluation ciements	Colloquia/ Written exam		50-64,9%	65-79	9,9%	8	30-89,9%
	,		25 points	30 pc	oints	3	35 points
			2	3	3		4
	Oral exam		25 points	30 points		35 points	
	Percentage of acquir competences (tea			Numerical grade		ECTS grade	
4.3. Final grade according	90 -	- 100%		5 (excellent)		А	
to absolute division		- 89,9%		4 (very good)		В	
		- 79,9%		3 (good)		<u> </u>	
		<u>- 64,9%</u> - 59,9%		2 (satisfactory)		D E	
5. ADDITIONAL COURSI		- 39,9%		2 (satisfactory)	)	<u> </u>	·
5.1. Compulsory literature (available in the library			Title		Ν	umber of copies in the library	Availability via other media

and via other media)	Katja Bošković Gazdović: "English textbook of Transport I", Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	Х		
5.2 Additional literature (at the moment of changes and/or amended of study programme)	<ul> <li>Tamara Polić: "The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students", Veleučilište u Rijeci, Prometni odjel, 2007.</li> <li>Adrian Pilbeam and Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010</li> <li>A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University</li> <li>A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University</li> <li>A.J. Thomson, A.V. Martinet: "A Practical English Grammar exercises II", Oxford University</li> </ul>	10	X (elearning, handouts)		
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.				
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursew classes or possible adjournment will be published in a timely manner on the e-learning site of the Students can contact teachers during the consultation period (at least one hour per week), while contacted during class. It is also possible to ask questions by e-mail (from the official e-mail soon as possible (no later than five working days after receiving the e-mail).	he course and on the we for short questions and	ebsite of the Polytechnic. explanations they can be		

10. GENERAL INFORM	IATION						
1.1. Course lecturer	Luka Olivari	1.8. Course code in ISVU	187606				
1.2. Course title	Theory of vehicle movement	1.9. Course code in MOZVAG					
1.3. Assistants and/or associates	-	(30+15+0+0)					
<ul><li>1.4. Study programme</li><li>(specialist, undergraduate, graduate)</li></ul>	Undergraduate professional study of traffic	1 <sup>st</sup> , course materials are on-line, 0%					
1.5. Course status (obligatory, optional)	Obligatory	bligatory 1.12. Number of course revisions					
1.6. Year of study	$2^{nd}$	1.13. Modernization					
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% More than 20 %				
11. COURSE DESCRIP							
2.1. Course objectives	The aim of the course is to provide students successfully solve the problem of road vehicle e	with theoretical knowledge and practical examples to acquire the k exploitation.	nowledge necessary to				
2.2. Terms of course entry and required competences	Four-year secondary education completed; qual	ification level 4.2 according to the CROQF.					
2.3. Learning outcomes on the study programme level	LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic LO8: To solve problems in traffic by using analytical and / or graphical methods LO13: To track trends in the development of technique, technology and safety in traffic						
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 werbs for LO)       1 - memory,         2 - understanding,       3 - application,         4 - analysis,       4 - analysis,						

	<ul> <li>6. Describe the basic concepts in vehicle movement theory</li> <li>7. Distinguish the drive engines, concepts and elements of transmission of road vehicles.</li> <li>8. Formulate the final equation of motion of the vehicle based on the traction forces and the resistance of movement of the vehicle.</li> <li>9. Evaluate the fuel economy of a road vehicle.</li> <li>10. Analyze the stability of the road vehicle under different operating conditions.</li> </ul>						1,
2.5. Course content according to detailed curriculum schedule	Const	ructive allignement				1	
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation		Time
	1.	Introductory presentation (introducing students to the content and obligations of the course). Area of study of vehicle motion theory. Exploitation of vehicle technical characteristics.	1	Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning course page. Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the oral exam they define an basic terms, physical q units of measurement.	d explain the	3 h
	2.	Performance characteristics related to vehicle movement. Construction of motor vehicles.	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the oral exam they define an basic concepts; distingu drive engines, concepts; of transmission of road ve numerical tasks from t area;	d explain the hish between and elements ehicles; solve	3 h

3.	Dynamism. Traction dynamic. Braking dynamic.	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam define and explain the basic concepts; distinguish between powertrains, and modes and elements of transmission of road vehicles; formulate the final equation of motion of the vehicle based on the traction forces and the resistance of the vehicle; solve numerical tasks from the specified area;	3 h
4.	Sliding. Rolling resistance. Air resistance. Inertia resistance.	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam define and explain the basic concepts; distinguish between powertrains, and modes and elements of transmission of road vehicles; formulate the final equation of motion of the vehicle based on the traction forces and the resistance of the vehicle; solve numerical tasks from the specified area;	3 h
5.	Dynamic factor. Car power balance.	1, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam define and explain the basic concepts; formulate the final equation of motion of the vehicle based on the traction forces and the resistance of the vehicle; evaluate the fuel economy of a road vehicle; solve numerical tasks from the specified area;	3 h
6.	Dynamic indicator for unequal movement. Dynamic climb control.	1, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts; formulate the final	3 h

		Inertia motion with the			equation of motion of the vehicle	
					based on the traction forces and the	
		engine off.				
					resistance of the vehicle; evaluate the	
					fuel economy of a road vehicle; solve	
					numerical tasks from the specified	
					area;	
		Overtaking. Economy. Fuel		Listen to a lecture and read literature. The	At the colloquium or the written and	
		consumption equation.		exercises demonstrate how to solve tasks.	oral exam they define and explain the	
		Method of normalizing fuel		Independent task solving.	basic concepts; formulate the final	
		consumption			equation of motion of the vehicle	
	7.	1	1, 3, 4		based on the traction forces and the	3 h
					resistance of the vehicle; evaluate the	_
					fuel economy of a road vehicle; solve	
					numerical tasks from the specified	
					*	
		0, 1, 11, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1			area;	
		Stability. Longitudinal		Listen to a lecture and read literature. The	At the colloquium or the written and	
		stability. Transverse		exercises demonstrate how to solve tasks.	oral exam they define and explain the	
	8.	stability. Rotate the vehicle	1, 5	Independent task solving.	basic concepts; analyze the stability of	3 h
	0.	on a horizontal and	1,0		the road vehicle under different	0 11
		transverse inclined path			operating conditions; solve numerical	
					tasks from the specified area;	
		Single axle sliding. Force		Listen to a lecture and read literature. The	At the colloquium or the written and	
		distribution		exercises demonstrate how to solve tasks.	oral exam they define and explain the	
				Independent task solving.	basic concepts; analyze the stability of	
	9.		1, 5		the road vehicle under different	3 h
					operating conditions; solve numerical	
					tasks from the specified area;	
-		Distribution of tangential		Listen to a lecture and read literature. The	At the colloquium or the written and	
	10	•	1 5		-	2 L
	10.	forces across axles	1, 5	exercises demonstrate how to solve tasks.	oral exam they define and explain the	3 h
				Independent task solving.	basic concepts; analyze the stability of	

					the road vehicle under different operating conditions; solve numerical tasks from the specified area;	
	11.	Constant deceleration curve. Curves of constant brake grip coefficient	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts; formulate the final equation of motion of the vehicle based on the traction forces and the resistance of the vehicle; analyze the stability of the road vehicle under different operating conditions; solve numerical tasks from the specified area;	3 h
	12.	Possibility of distributing braking forces.	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts; formulate the final equation of motion of the vehicle based on the traction forces and the resistance of the vehicle; analyze the stability of the road vehicle under different operating conditions; solve numerical tasks from the specified area;	3 h
	13.	Braking force control device. Correctors. Anti- lock braking (ABS) devices.	1, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts; analyze the stability of the road vehicle under different operating conditions; solve numerical tasks from the specified area;	3 h
	14.	Construction of anti-lock	1, 5	Listen to a lecture and read literature. The	At the colloquium or the written and	3 h

			es. Illations passenger ideration,		exercises demonstrate Independent task solvir Listen to a lecture a	ıg.	basic concepts; analyze the road vehicle u operating conditions; s tasks from the specified	the stability of nder different solve numerical	
	15.	repetition and pr for the exam.	eparation	-	Prepare individually for	the exam.			3 h
<b>12. EVALUATION OF S</b>	STUDE	NT WORK							
3.1. Student obligations	3.1. Student obligations In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of Student Performance: Full-time students are required to attend classes at least 70%, which is also a requirement for obtaining the lecturer's signature. Students can take the final exam in the course in two ways: a) during the course, by taking colloquiums and oral part of the exam; b) passing the written and oral part of the exam.							exam in	
3.2. Student work monitoring (enter the	Attend	ing classes	1,5		Written exam	1 (without colloquiums)	Project		
share of ECTS credits for	Experi	mental work			Research		Practical work		
each activity so that the	Essay				Report		Continuous check	0,5	
total number of ECTS credits corresponds to the	Colloq	uiums	1 (without exam)	t written	Seminar paper		Field works or Study trips		
course credit value)	Teachi	ng activities			The oral part of exam	1	(other)		
		t workload on all be preparation of semi <i>Obligation</i>			-	er semester and is Hours (estimation	estimated as going to field	work or study tr	ips (30
3.3. Student work-load	21. Attending classes 45								
		2. Continuous check		ons		15			
		3. Colloquiums and			al preparation	30			
	2	4. Oral exam individ	lual prepar	ation		30			

4. FORMATION OF STU	JDENT GRADE			
	Elements of evaluation	Bad	Satisfying	Above average
4.1. Evaluation of written exam	Physical quantities and their units of measurementStructure, traceability, legibility and orderliness of the procedure, diagrams and sketchesApplication of appropriate equation (formulas) and the final result.	Nonstandard physical units have not been converted to basic or have been converted wrong. The task is not properly structured, it is not traceable, and it is not readable. Diagrams and sketches are non-existent, inaccurate, messy, unclear and ambiguous. Uses expressions that do not describe the problem specified, or incorrectly expresses the physical unit from the expression. Numeric values are not included in the expression. The end result is incorrect.	Nonstandard units have been converted to basic units with minor errors in calculation. The task is satisfactorily structured, traceable and readable. The diagrams and sketches are meaningful, neat with minor errors. Uses expressions that describe the problem in question, accurately derives physical quantities from the expression, incorporates numerical values into the expression with smaller numbers, the final result has smaller deviations from the exact result.	Nonstandard units have been converted to base units without error. The task is clearly structured, complete, very neat and legible. The diagrams are completely accurate, clear and very neat. Uses expressions that describe the problem in question, accurately derives physical quantities from expressions, lists units of measure without errors, the final result is completely accurate.
4.2. Evaluation of oral exam	Knowledge and expression.	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supports them with examples. Knows the expert terminology.	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles of physical laws, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts and supports them with examples. Finds solutions that were not originally given. It notes correlations with

					related ma professional t	iterial. Fluent in erminology.	
	Attending classes	> 80%	> 85% >		prisustva	100%	
	-	4 points	6 points	8 p	oints	10 points	
4.3. Forming the final grade according to the evaluation elements	Continuous check	0-5	6-10	11	-15	16-20	
	Colloquiums/	2	3		4	5	
	Written exam	50-64,9%	65-79,9%	80-8	39,9%	90-100%	
	-	50-64,9 bodova	65-79,9 bodova	80-89,9	9 bodova	90-100 bodova	
	The oral part of exem	2	3		4	5	
	-	50-64,9 bodova	65-79,9 bodova	80-89,9	9 bodova	90-100 bodova	
	Percentage of acquired l competencies (teach	0	Numerical grade		ECTS grade		
4.4. Formation of the final	90 – 100% 5 (excellent)				1	A	
grade based on the	80 - 89	9,9%	4 (very good)		]	В	
absolute distribution	65 - 79	9,9%	3 (good)			С	
	60 – 64,9% 2 (sufficient)				D		
	50 - 59	9,9%		Е			
5. ADDITIONAL INFOR	MATION ABOUT COU	RSE		·			
		Title		Nur	nber of copies in the library	Availability via other media	
5.1. Compulsory literature (available in the library	1. Perše, S., Višnjić 2005. (odabrana		u, Fakultet prometnih znanosti,	Zagreb,	10		
and via other media)	2. Cerovac V., Tel 2001. (odabrana	<b>č</b>	Fakultet prometnih znanosti,	Zagreb,	5		
		kšić M., Osnove strojarstv sti, Zagreb, 2000. (odabrana	va, zbirka riješenih zadataka, 1 a poglavlja)	Fakultet	5		

5.2. Additional literature	22. Teaching materials from the lectures and exercises on the e-learning system of the		
(at the moment of changes	Polytechnic for the course Technical Mechanics.	-	on-line (e-learning)
and/or amended of study	23. Rotim, F.: Elementi sigurnosti cestovnog prometa, Svezak 2., Znanstveni savjet za	1	
programme)	promet HAZU, Zagreb, 1991.		
	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By		
5.3. Quality assurance	keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and		
methods that ensure the	homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be		
acquisition of knowledge,	informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system:		
skills and competences	Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from		
	employers and Alumni association.		
	It is the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of		
5.4. Informing about the	classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the		
course and contacting the	Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and		
course lecturer	explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address name@vus.hr),		
	which will be answered as soon as possible (no later than five working days after receiving the e-mail).		