

## Šibenik University of Applied Sciences

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## Erasmus + Course Catalogue

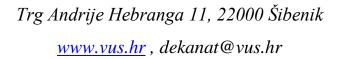
Academic year 2024./2025.



Šibenik, June 2024.



## Šibenik University of Applied Sciences





## Professional undergraduate study of Traffic (Department of Traffic Studies)

Dean: PhD. Ljubo Runjić, college professor

Acting Head Department of Traffic studies: Darijo Šego, univ. spec. traff., senior lecturer

## **Courses list**

Course	Course lecturer	Course title	<b>ECTS</b>	
code	Course lecturer	Course title	credits	
201133	Beljo Ivana/Perišić Ana	Mathemathics I	8	
201133	Beljo Ivana/Perišić Ana	Mathemathics II	8	
214569	Beljo Ivana/Perišić Ana	Statistics in traffic	4	
201138	Beljo Ivana/Perišić Ana	Operational research in traffic	4	
187586	Gaćina Nikolina	Knowledge of goods	4	
129833	Kardum Goleš Ivana	English language I	3	
187599	Kardum Goleš Ivana	English language II	3	
140775	Kardum Goleš Ivana	English language III	3	
140784	Kardum Goleš Ivana	English language IV	3	
201132	Olivari Luka	Graphic communication	5	
142538	Olivari Luka	Theory of vehicle movement	4	
201142	Poljičak Ana-Mari	Traffic in tourism	3	
140777	Poljičak Ana-Mari	Freight-distributional centers	5	
140777	1 Official 7 that 14 tari	and terminals	3	
214571	Poljičak Ana-Mari	Transshipment resources	6	
201135	Radić Lakoš Tanja	Traffic and ecology	4	
140771	Šego Darijo	Traffic corridors and	4	
140//1	Sego Darijo	merchandise flows	4	
201134	Šego Darijo	Modern traffic systems	6	
140773	Šego Darijo	Traffic logistic	4	

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#### **Course Curriculums**

#### **Mathemathics I**

1. GENERAL INFORMATION	1. GENERAL INFORMATION ABOUT THE COURSE					
1.1. Course title	MATHEMATICS I	1.8. ISVU course code	270660 / 270661			
1.2. Course lecturer	Ivana Beljo dipl. ing. mat., univ. spec. oec., senior lecturer	1.9. MOZVAG course code	-			
1.3. Assistants and/or associates	PhD Ana Perišić, college professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)				
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	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	1 <sup>st</sup>	1.13. Modernization	□ yes <b>X</b> no			
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □			

2. COURSE DESCRIPTION					
	The objective of the course is for students acquire knowledge and skills in analytical thinking, as well as logical reasoning and interpreting results for				
2.1. Course objectives	further education. The goal of the course is for students to be equipped, based on theoretical knowledge and case studies, to understand, comprehend,				
	recognize, and apply various quantitative methods for solving specific problems and methods for optimizing such problems				
2.2. Terms of course entry and	Form years according advantion completed, qualification level 4.2 according to the CDOOF				
required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.				
2.3. Learning outcomes on the	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members				
study programme level					

		To individually and responsibly search,	•					
	LO4:	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic						
	LO6:	LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions						
	LO8:	LO8: To solve problems in traffic by using analytical and / or graphical methods						
2.4. Expected learning outcomes	Learning outcomes according to the Bloom's taxonomy: (up to two verbs per LO)  Learning outcomes according to the Bloom's taxonomy: (up to two verbs per LO)  3-4-5-6-6-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1							
on the course level	1	3, 4						
	2		4, 5					
	3		4					
	4	4, 5						
	5. To apply functional analysis methods in transport problems solving.						4, 5	
	Cons	tructive allignement						
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation		Time needed	
2.5. Course content according to detailed curriculum schedule	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.	-		2 h	
	2.	Sets. Sets of numbers.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and o students know how to enum distinguish basic concepts r	erate and	4 h	

		1		1	1	
					assemblies and perform basic operations	
					on sets.	
	3.	Functions – basic terms, Elementary functions.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	4.	Composition of the functions. Inverse function.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	5.	Evenness and oddness of a function. Periodicity of a function. Domain of a function. Graph of a function	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	6.	Growth/decline of a function. Concavity/convexity of a function	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	Limit of the function. Continuity of functions.	2, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to to calculate limits.	4 h	
	8.	Revision for colloquium. Colloquium. Derivatives.	1, 2, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve derivatives.	4 h
	9.	Derivative of a function, interpretation. Differentiation of elementary functions.	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve derivatives.	4 h

10.	Derivative of composition	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve derivatives.	4 h
11.	Monotonicity and extrema of a function.	2, 4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to examine the basic properties of a function, to analyze the solutions obtained and to draw a graph of the function based on them, and to comment on the obtained solutions.	4 h
12.	L'Hospital. Asymptotes of the function.	2, 4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to examine the basic properties of a function, to analyze the solutions obtained and to draw a graph of the function based on them, and to comment on the obtained solutions.	4 h
13.	Basic analysis of functions of one variable. Convexity and concavity of a function.	2, 4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to examine the basic properties of a function, to analyze the solutions obtained and to draw a graph of the function based on them, and to comment on the obtained solutions.	4 h
14.	Applications of Derivatives.	4, 5	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to examine the basic properties of a function, to analyze the solutions obtained and to draw a graph of the function based on them, and to comment on the obtained solutions.	4 h
15.	Final conclusions. Exam preparation.	1, 2, 3, 4, 5	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	-	4 h

3. EVALUATION OF STUDENTS` WORK									
3.1. Students` obligations	discussions, solv (ivana.beljo@vu regarding the co information abou ways: a) During	-							
	Attendance	0,5	Written exam	3 (with		Project			
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research			Practical work			
for each activity so that the total number of ECTS points	Essay		Report			Continuous examination	0,5		
corresponds to the credit score of the course)	Colloquium	3,5 (without written and oral exam)	Seminar paper			Other			
	Class activity	0,5	Oral exam	0,5 (w		Other			
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:								
		Obliga	ation		Hours (estimate)				
3.3. Student workload	1. Attend	ding classes and exercises				60			
	2. Prepar	2. Preparation for the Colloquium / exam through self-study 90							
4. GRADING SYSTEM									
4.1. Grading seminar papers									
4.2. Grading colloquia/ written and oral exam	U	Unsatisfactory Satisfactory			Above average				

	Responds by memory, understanding. Does no basic terms and concep how to apply or explain course with examples.	ot know or apply ts. Does not know	difficulty understand	s the basic concepts and without imparts new knowledge, s the material, explains the terms outs supported with examples.	evaluation. Obs thoroughly explai connects and expl examples. Finds	nowledge is at the level of analysis, synthesis a aluation. Observes the principles, accurately a proughly explains the content of the material, and logical nunects and explains the terms and concepts supported we amples. Finds solutions that were not originally give test correlations with related material.		
	Activities in class	Preparation for te	aching units;	Understanding previous content;	Participation in sol	ving tasks togeth	er: 0 – 20 points	
4.3. Final grade according to	Seminar papers			-				
evaluation elements	Colloquium/written exam	Preparation/learni	ing; Scoring	and grading according to correct a	nnswers in the test:	0 – 80 points (mi	n 40 points)	
	Oral exam	Preparation/learni	ing; addition	al verification of unachieved learn	ing outcomes			
	Percentage of acquired knowledge, skills and competences (teaching + final exam)			Numerical grade		ECTS grade		
42 F' 1 1 1 1' 4	90	0 - 100%		5 (excellent)		A		
4.3. Final grade according to absolute division	80	) – 89,9%		4 (very good)		В		
	65 – 79,9%			3 (good)		С		
	50	) – 64,9%		2 (satisfactory)		D		
5. ADDITIONAL INFORMATIO	N ABOUT THE COURS	SE						
5.1. Compulsory literature (available in the library and via	Title Number of copies in the library Availability via other media						•	
other media)	Pašagić, H., Ivanković, B., Kapetanović, N.: Mathematical methods in Traffic, Zagreb, 2004.							
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Neralić, L.: Introduction in mathematics programming 1, Zagreb, 2012.  Hillier F., Lieberman G.: Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed.							
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 coursework, and the classroom activities. All notices of 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).

#### **Mathematics II**

1. GENERAL INFORMATION ABOUT THE COURSE					
1.1. Course title	MATHEMATICS II	1.8. ISVU course code	270667 / 270668		
1.2. Course lecturer	Ivana Beljo grad. eng. mat., univ. spec. oec., senior lecturer	1.9. MOZVAG course code	-		
1.3. Assistants and/or associates	PhD Ana Perišić, college professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	30 + 30 + 0 + 0		
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	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	1 <sup>st</sup>	1.13. Modernization	□ yes <b>X</b> no		
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 %		

2. COURSE DESCRIPTION	
2.1. Course objectives	Introducing students to the fundamental concepts of linear algebra and functions of single variable, which they can apply in different courses. Adopting analytical skills, logical and critical thinking skills.
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 level	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members.  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.								
	LU6:	To analyze and present relevant facts fro	om the neid	of traffic needed to reach conclusio	118.			
	LO8:	To solve problems in traffic by using an	alytical and	/ or graphical methods.				
2.4. Expected learning outcomes on the course level  6. To solve integrals by applying the appropriate integration techniques.  7. To carry out fundamental operations on matrices and vectors.  8. To propose a method and solve systems of linear equations.  9. To apply linear algebra and functional analysis methods in transport problems solving.							Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis 4, 5 4 5, 4	
	9	2. To apply linear algebra and function	al analysis n	nethods in transport problems solving	ıg.		4, 5	
	Constructive allignement							
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation		Time needed	
2.5. Course content according to	10	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.	-		2 h	
detailed curriculum schedule	17.	Integrals	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and o students know how to solve an		4 h	
	18.	Indefinite Integrals. Definite Integrals.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and o students know how to solve an and definite integral.		4 h	
	19.	Substitution Rule and Integration By Parts	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and o students know how to solve an		4 h	

	T	ı	T		
				integral using the method of substitution and partial integration.	
20.	Applications of Integration.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to analyze and sketch a graph of functions, and solve a definite integral.	4 h
21.	Applications of Integration. Revision for colloquium. Colloquium.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to analyze and sketch a graph of functions, and solve a definite integral.	4 h
22.	Matrices.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define matrices, perform basic computational operations with matrices.	4 h
23.	Determinants.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to calculate the determinants.	4 h
24.	The inverse matrix.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to calculate the inverse of a matrix	4 h
25.	Systems of linear equations.	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to recommend a method for solving a system of linear equations and solve a system and apply it to problems.	4 h
26.	Vectors.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors.	4 h
27.	Scalar and vector product.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors.	4 h

	28.	Vector and mixed vector product	. 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written students know how to perform basic computat with vectors.	define vectors,	4 h
	29.	Applications of linear algebra.	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written students know how to method for solving a sequations and solve a systo problems.	ystem of linear	4 h
	30.	Final conclusions. Exam preparation.	1, 2, 3, 4	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	-		4 h
3. EVALUATION OF STUDENT	s, mor	RK					
3.1. Students` obligations	Student obligations are prescribed by the Study Regulations. It is recommended that students actively participate in classes, which includes engaging in discussions, solving tasks, etc. Students who are unable to attend classes regularly should consult with the professor during consultation hours or via emai (ivana.beljo@vus.hr , ana.sisak@vus.hr ). It is the responsibility of each student to stay informed about the conduct of classes. All announcements regarding the conduct or possible postponement of classes will be posted on the website of the Polytechnic of Šibenik or the course webpage, where all information about the course, as well as teaching materials and a list of literature, can also be found. Students can pass the final exam in the course in two ways: a) During the course through continuous student assessment (active participation in classes) and by taking the exam (written and oral parts).						
3.2. Monitoring student work	Attend	ance 0,5	Written exam	3 (without colloquium)	Project		
(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)	Experi work	mental	Research		Practical work		
	Essay		Report		Continuous examination	0,5	
	Colloq	uium 3,5 (without written and oral exam)	Seminar paper		Other		

and oral exam)

	Class activity	0,5	Oral exam	n	0,5 (without colloquium)	Other		
	The student's wo		ounts to 1 ECT ligation	S point for 30	hours of work per sem	nester and is estimated as:  Hours (estim	ate)	
3.3. Student workload	3. Attend	ling classes and exercis	es		60			
	4. Prepar	ation for the Colloquiu	m / exam thro	ugh self-study		90		
4. GRADING SYSTEM								
4.1. Grading seminar papers								
	Uı	nsatisfactory		Satisfa	ectory	Abov	ve average	
4.2. Grading colloquia/ written and oral exam	understanding. basic terms and	nemory, without a dee Does not know or ap I concepts. Does not kn explain the contents of amples.	Reprodu difficult understa	y imparts ands the mater	concepts and without new knowledge, ial, explains the terms d with examples.	thoroughly explains the content of the material, and logically		
	Activities in cla	tivities in class Preparation for teaching units; Understanding previous content; Pa					s together: 0 – 20 points	
4.3. Final grade according to	Seminar papers				-			
evaluation elements	Colloquium/wr	Preparation/le	earning; Scori	ng and grading	g according to correct a	g to correct answers in the test: 0 – 80 points (min 40 points)		
	Oral exam	Preparation/le	earning; additi	onal verificati	on of unachieved learn	ing outcomes		
	_	of acquired knowledge tences (teaching + fina			Numerical grade	F	ECTS grade	
4.2 Final and according to		90 – 100%			5 (excellent)	6 (excellent) A		
4.3. Final grade according to absolute division		80 – 89,9%			4 (very good)		В	
		65 – 79,9%			3 (good) C			
		50 – 64,9%			2 (satisfactory) D			

5. ADDITIONAL INFORMATIO	5. ADDITIONAL INFORMATION ABOUT THE COURSE									
5.1. Compulsory literature (available in the library and via	Title	Number of copies in the library	Availability via other media							
other media)	Marušić S.: Mathematics and textbook with resolved examples, Zagreb, 2007. Beljo I., Olivari L.: Mathematics, Šibenik University of Applied Sciences, 2024.	5	On-line							
5.2. Additional literature (at the moment of changes and/or amended of study programme)  Teaching materials from lectures and exercises  Bradić, T., Rojki, R., Pečarić, J., Strunje, M.: Mathematics for Faculty of Technology, Multigraph - Zagreb 1994.										
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 the attendance and student activity during classes and provided information on students` progress through short of further guidance to students will be provided in order to increase the efficiency of their work. Students will be as well as the methods of work and the required literature. Indicators of quality assurance system: Student students are created as the methods of work and the required literature and students of quality assurance system:	olloquiums and informed about survey, monitori	homework, information for their rights and obligations							
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 coursework, and the clapossible adjournment will be published in a timely manner on the e-learning site of the course and on the websteachers during the consultation period (at least one hour per week), while for short questions and explanation also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered working days after receiving the e-mail).	site of the Polyte ons they can be o	chnic. Students can contact contacted during class. It is							

#### **Statistics in traffic**

1. GENERAL INFORMATION	1. GENERAL INFORMATION ABOUT THE COURSE								
1.1. Course title	STATISTICS IN TRAFFIC	1.8. Course code in ISVU	214569 / 214570	0					
1.2. Course lecturer	PhD Ana Perišić, college professor	1.9. Course code in MOZVAG							
1.3. Assistants and/or associates	Ivana Beljo, grad. eng. math., univ. spec. oecc., senior lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30+30+0+0)	))					
1.4. Study programme (professional undergraduate, and professional 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> , course mater 0%	erials are on-line,					
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 □ r	<b>X</b> yes □ no					
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% More than 20 %	<b>X</b> 6 □					
2. COURSE DESCRIPTION				_					
2.1. Course objectives	The goal is to provide students with theoretical kno	owledge and practical skills needed for performing statistical	analysis and inter	pretation of the results.					
2.2. Terms of course entry and required competences	No conditions.								
2.3. Learning outcomes on the	LO1: To apply and link professional terms from tecl in Croatian and English.	chnology and organization of road traffic in written and oral c	communication wi	ith the professional public					
study programme level	LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions.								
	LO8: To solve problems in traffic by using analytic	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 taxo	conomy: (up to two verbs per LO)		Level of LO: 1- remembering,					

	To define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics.     To calculate and interpret values for the measures of central tendency and dispersion parameters.     To define fundamental concepts and solve basic problems in the field of combinatorics and probability theory.     To select and apply probability models for different stochastic phenomena.     To conduct correlation and regression analysis and derive conclusions on variable relationship.  Constructive allignement						ding, n, 2 4 4 3
		tructive allignement  Thematic unit	LO of the	Content/teaching methods	Evaluation		Time
	no	I nematic unit	course	Content/teaching methods	Evaluation		needed
	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations and.	-		2 h
2.5. Course content according to detailed curriculum schedule	2.	Descriptive statistics.	1,2	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundame of descriptive statistics a indicator values from the descriptive statistics; will continue interpret values for the measure tendency and dispersion through colloquia or written/o Students will apply methods of statistics in transport problem.	nd interpret the field of calculate and tres of central parameters tral exams.	4 h
	3.	Measures of central tendency	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundame of descriptive statistics a indicator values from th descriptive statistics; will c interpret values for the measu	nd interpret ne field of calculate and	4 h

					<del></del>	
					tendency through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems.	
	4.	Positional measures of central tendency	1, 2	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 through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems.	4 h
	5.	Measures of dispersion	1, 2	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.	4 h
	7.	Correlation and regression.	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will conduct correlation and regression analysis and derive conclusions on variable relationship through colloquia or written/oral exams.  Students will apply statistical methods for solving transport problems	4 h
		Partial exam preparation. Introduction to combinatorics	1, 2, 5, 3	Group problem solving and discussion. Exam preparation. Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of combinatorics through colloquia or written/oral exams. Students will apply	4 h

				1			т
						probability theory in transport problems solving.	
		8.	Introduction to combinatorics	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of combinatorics through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	4 h
		9.	Permutations, Variations, Combinations	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of combinatorics through colloquia or written/oral exams.	4 h
		10.	Introduction to probability theory.	3	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.	4 h
		11.	Introduction to probability theory. A priori probability, a posteriori probability, geometric probability	3	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.	4 h
		12.	Random variable, distributions, expectation, variance.	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. Students will apply probability theory in transport problems solving.	4 h

	13.	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.	4 h		
	14.	Continuous random variables. Normal 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. Students will apply probability theory in transport problems solving.	4 h		
	15.	Final conclusions. Exam preparation	-	Group problem solving and discussion. Exam preparation.	-	4 h		
3. EVALUATION OF STUDENTS` WORK								
	Student obligations are prescribed by the Study Regulations. It is recommended that students actively participate in classes, which includes engaging in discussions, solving tasks, etc. Students who are unable to attend classes regularly should consult with the professor during consultation hours or via email							

## 3.1. Students` obligations

discussions, solving tasks, etc. Students who are unable to attend classes regularly should consult with the professor during consultation hours or via email (ivana.beljo@vus.hr, ana.sisak@vus.hr). It is the responsibility of each student to stay informed about the conduct of classes. All announcements regarding the conduct or possible postponement of classes will be posted on the website of the Polytechnic of Šibenik or the course webpage, where all information about the course, as well as teaching materials and a list of literature, can also be found. Students can pass the final exam in the course in two ways: a) During the course through continuous student assessment (active participation in classes and two colloquiums). Students who do not meet some of the learning outcomes are required to take the oral part of the exam. b) During the course (active participation in classes) and by taking the exam (written and oral parts).

# 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)

	Attendance	0.5	Written exam	2 (without colloquia)	Project	
ts al	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	0.5
	Colloquium	2,5 (without written exam)	Seminar paper		Other	

	Class activity	0.5	Oral exam	0.5(without colloquia)	Other			
	The student's work	load on all bases amounts  Obligat	*	ours of work per semest	er and is estimated as:  Hours (estimated)	ate)		
3.3. Student workload	5. Attendir	ng classes and exercises			60			
	6. Preparat	ion for the Colloquium / ex	xam through self-study		60			
4. GRADING SYSTEM								
4.1. Grading seminar papers								
	Un	satisfactory	Satisfa	etory	Above	e average		
4.2. Grading colloquia/ written and oral exam	understanding. I basic terms and	emory, without a deeper Does not know or apply concepts. Does not know explain the contents of the aples.	without difficulty knowledge, understa	imparts new nds the material, concepts supported	Knowledge is at the level of analysis, synthesis ar evaluation. Observes the principles, accurately ar thoroughly explains the content of the material, and logical connects and explains the terms and concepts supported wire examples. Finds solutions that were not originally give Notes correlations with related material.			
	Activities in class	Preparation for tea	Preparation for teaching units; Understanding previous content; Participation in solving tasks together: 0 – 20 points					
4.2 Final and a coording to	Seminar papers			-				
4.3. Final grade according to evaluation elements	Colloquium/writt exam	Preparation/learni	Preparation/learning; Scoring and grading according to correct answers in the test: 0 – 80 points (min 40 points)					
	Oral exam	Preparation/learni	ng; additional verificatio	n of unachieved learning	outcomes			
4.4. Final grade according to	_	acquired knowledge, skills es (teaching + final exam)	and Nu	merical grade	I	ECTS grade		
absolute division		90 – 100%	5	(excellent)		A		
		80 – 89,9%	4	(very good)		В		

	65 – 79,9% 3 (good)			С	С		
	50 – 64,9%	2 (satisfactory)					
5. ADDITIONAL INFORMATI	ON ABOUT THE COURSE						
5.1. Compulsory literature (available in the library and via		Number of copies in the library	Availability via other media				
other media)	Kovač Striko E., Fratović T., Ivanković B., Probal 2008.	bility and statistics, Books of University of Za	greb, Zagreb	1	No		
	Šošić I., Serdar V.: Introduction to statistics, School book, Zagreb, 2002. Šošić I.: Applied statistics, School book, Zagreb, 2004. Azcel A. Sounderpandian J.: Complete Business Statistics, McGraw Hill, 2009.						
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Zenzerović Z.: Statistical manual, Faculty of Mariti Čižmešija M., Kurnoga Živadinović N.: A collectio 2006.	5 2					
	Patrick R. McMullen: Business statistics for pro- Polytechnic of Šibenik, 2017. Teaching materials on e-learning	_					
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 coursework, and the classroom activities. All notices of classes possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. 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 fir working days after receiving the e-mail).						

#### Operational research in traffic

1. GENERAL INFORMATION	GENERAL INFORMATION ABOUT THE COURSE							
1.1. Course title	OPERATIONAL RESEARCH IN TRAFFIC	1.8. ISVU course code	201138 / 202091					
1.2. Course lecturer	Ivana Beljo grad. eng. mat., univ. spec. oec., senior lecture	1.9. MOZVAG course code	-					
1.3. Assistants and/or associates	PhD Ana Perišić, collegue professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30+15+0+0)					
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	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 <b>X</b> no					
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	
2.1. Course objectives	The objective of the course is for students acquire knowledge and skills in analytical thinking, as well as logical reasoning and interpreting results for further education. The goal of the course is for students to be equipped, based on theoretical knowledge and case studies, to understand, comprehend, recognize, and apply various quantitative methods for solving specific problems and methods for optimizing such problems
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 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.

LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process.								
		To solve problems in traffic by using an	•					
	LU8:	To solve problems in traffic by using an	iaryticai and	/ or graphical methods.				
2.4. Expected learning outcomes	Lear	Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis						
on the course level	1	0. Formulate a mathematical model for	linear optin	nization problems.			6	
	1	1. Solve optimization problem with gra	phical meth	od.		4		
	1	12. Apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.					3, 5	
	13. Choose the appropriate algorithm and solve the problem on network.					3, 4		
	14. Design a model for project management and recommend optimal savings by cutting the duration of activities.						6, 5	
	Constructive allignement							
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation		Time needed	
2.5. Course content according to detailed curriculum schedule	31	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.	-		2 h	
	32.	Formulate a mathematical model	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mat model.	thematical	3 h	
	33.	Linear programming	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mat model.	hematical	3 h	

			1		1
34.	Linear Programming Problems. Graphical solution	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to model a linear programming problem and sketch a graph and solve an optimization problem.	3 h
35.	Solving linear programming problems: The Simplex method. The Excel Solver	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to model the linear programming problem and solve the problem with the simplex method and using the Solver and recommend the optimal solution.	3 h
36.	Postoptimality analysis	1, 2, 3	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model and apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	3 h
37.	The Transportation problem.	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	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
38.	Northwest corner rule, Minimum prices method, Vogel's approximation method, Russel's approximation method	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	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
39.	The Assignment Problem	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve the transport problem and the assignment problem.	3 h
40.	An Overview of Various Applications of Linear Programming Methods in Practical Examples. Exam preparation	1, 2, 3	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model, apply computer tools in solving linear programming problems and	3 h

					recommend and valorize the solution	
					through postoptimality analysis.	
		Network Optimization Models. The		Attending lectures. Actively	Students will choose the appropriate	
	41.	shortest-path problem. The minimum	4	involving students through	algorithm and solve the problem on	3 h
		spanning tree problem.		problem solving and discussion.	network.	
		The maximum flow problem The		Attending lectures. Actively	Students will choose the appropriate	
	42. The maximum flow problem. The	4	involving students through	algorithm and solve the problem on	3 h	
		minimum cost flow problem.		problem solving and discussion.	network.	
	43.	Project Management with PERT/CPM	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will design a model for project management and recommend optimal savings by cutting the duration of activities.	3 h
				Attending lectures. Actively	Students will propose optimal business	
	44.	Dynamic Programming	5	involving students through	decisions using dynamic programming	3 h
			problem solving and discussion.	methods.		
				Attending lectures. Actively		
		Final conclusions.	1, 2, 3, 4,	involving students through		3 h
	45.	Exam preparation.		problem solving and discussion.	-	
		Zaum propuration.		Group problem solving and		
				discussion. Exam preparation.		
3. EVALUATION OF STUDENTS	e, moi	RK				
	Studen	t obligations are prescribed by the Study	y Regulation	s. It is recommended that students	actively participate in classes, which include	es engaging in
	discuss	sions, solving tasks, etc. Students who are	e unable to a	ttend classes regularly should consu	lt with the professor during consultation hou	rs or via email
	( <u>ivana.</u>	. <u>beljo@vus.hr, ana.sisak@vus.hr</u> ). It is th	e responsibi	lity of each student to stay informed	about the conduct of classes. All announcem	ents regarding
3.1. Students` obligations	the cor	nduct or possible postponement of classes	s will be pos	ted on the website of the Šibenik Ur	niversity of Applied Sciences or the course w	ebpage, where
5.1. Students obligations			•		be found. Students can pass the final exam in	
		•			classes and two colloquiums). Students wh	
		-	ake the oral	part of the exam. b) during the cou	rse (active participation in classes) and by ta	king the exam
	(writte	n and oral exam).				

Written exam

2 (without

colloquium)

Project

3.2. Monitoring student work

(enter the share of ECTS credits

Attendance

0,5

for each activity so that the total number of ECTS points	Experimental work		Research		Practical work		
corresponds to the credit score of the course)	Essay		Report		Continuous examination	0,5	
	Colloguium	2,5 (without written and oral exam)	Seminar paper		Other		
	, and the second	,	Oral exam	0,5 (without colloquium)	Other		
	The student's workl	load on all bases amounts	•	hours of work per seme			
		Obligat	tion		Hours (estimo	ute)	
3.3. Student workload	7. Attending	g classes and exercises			45		
	8. Preparation for the Colloquium / exam through self-study				65		
4. GRADING SYSTEM							
4.1. Grading seminar papers							
	Unsa	atisfactory	Satisfa	ctory	Above average		
4.2. Grading colloquia/ written and oral exam	understanding. Do basic terms and co	mory, without a deeper loes not know or apply oncepts. Does not know explain the contents of the ples.	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.		
	Activities in class	Preparation for te	aching units; Understand	ling previous content; P	articipation in solving tasks	together: 0 – 20 points	
4.3. Final grade according to	Activities in class Seminar papers	Preparation for te	aching units; Understand	ling previous content; P	articipation in solving tasks	together: 0 – 20 points	
4.3. Final grade according to evaluation elements		an an		-	articipation in solving tasks swers in the test: $0 - 80$ poi		
	Seminar papers Colloquium/writte	en Preparation/learni		according to correct an	swers in the test: $0 - 80$ poi		

	90 – 100%	5 (excellent)		A					
	80 – 89,9% 4 (very good)			В					
	65 – 79,9%	3 (good)		С					
	50 – 64,9%	2 (satisfactory)		D					
5. ADDITIONAL INFORMATION ABOUT THE COURSE									
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media				
other media)	Pašagić, H., Ivanković, B., Kapetanović, N.: Mathematical methods in traffic, Zagreb, 2004.			3					
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Neralić, L.: Introduction to Mathematical Programming 1, Zagreb, 2012. Hillier F., Lieberman G.: Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed.								
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.  It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of 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).								
5.4. Informing about the course and contacting the teacher									

#### **Knowledge of goods**

1. GENERAL INFORMATION	1. GENERAL INFORMATION ABOUT THE COURSE							
1.1. Course title	KNOWLEDGE OF GOODS	1.8. ISVU course code	187586 / 202074					
1.2. Course lecturer	PhD Nikolina Gaćina, senior lecturer	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)					
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd 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	<b>X</b> yes □ no					
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	
2.1. Course objectives	The goal is to provide students with theoretical knowledge and case studies: Defining the basic concepts of the science of knowledge of goods, Understanding the specificity of particular types of goods, their identification, conditions of packaging, transport and storage, and environmental friendliness; Understanding the need and importance of standardization and product quality, Understanding the importance and types of strategic goods, Apply the learned content of this course in business practice.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
	LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the profesional puublic in croation and English.
2.3. Learning outcomes on the	LO2: To organize and implement team work and critically judge the opinions and atitudes od team members.
study programme level	LO3: To individually and responsibly search, interpret and integrate the revevant literature needed to make decisions.
	LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions.

	LO10: To compare and choose technical and technollogical solutions in treffic and / or traffic logistics.					
	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: 1- Recapture, 2- Understanding, 3- Application, 4- Analysis, 5- Evaluation, 6- Synthesis				
	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				
2.4. Expected learning outcomes on the course level	2. Categorize and compare the basic concepts of the science of knowledge of goods.	4, 5				
on the course 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				
	<ol><li>Analyze and evaluate the specific characteristics and reasons for the application of particular packaging materials for different products.</li></ol>	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.	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				

			Constructive alignment							
2.5. Course content according to detailed curriculum schedule	No.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation	Time needed				
	16.	Introduction to the course and detailed curriculum. Introduction to writing a seminar paper.	-	Listen to the lecture.	-	2 h				
			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	4 h			

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					basic concepts of the science of knowledge of	
					goods.	
	17.	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
	18.	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
	19.	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
	20.	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 their choice. List and analyze the primary functions of packaging material.	10 h
	21.	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

		22.	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
		23.	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
		24.	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 methods.	10 h
		25.	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
		26.	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

	27.	Hazardous Substa	ances.	1, 2, 3, 4, 5, 6, 7, 8	•	lecture, present r, followed by a read literature	At the colloquium or the written they know: to define and classif dangerous substances, to analyz danger of the same.	y the types of	6 h
	28. 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 evaluations they in the property of the prope		they know: to define and classif of hazardous substances during	the colloquium or the written and oral examy know: to define and classify the labeling hazardous substances during transport, to luate the disposal and labeling of hazardous ste.		
	29.	29. Strategic Goods. 2. Colloquium.		1, 2, 3, 5, 6, 7, 8	•	lecture, present r, followed by a read literature	<u> </u>	ne colloquium or the written and oral exam know: to define and categorize strategic ds, to explain their importance.	
	30.	Concluding C Repetition and Ex	Considerations / xam Preparation.	-	They listen to a lecture and prepare individually for the exam.		-	-	
3. EVALUATION OF STUDEN	T WO	RK							
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: from 0 – 24,9% ECTS is rated unsuccessful and cannot get ECTS credits and must re-enrol the subject in the next academic year; from 25 – 49,9% ECTS is rated inadequate and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; more than 50% ECTS credits - students have the right to access the final exam of the subject. 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, making and presenting the seminar paper and project, passing two colloquia); b) during the course (active participation in the lessons, solving case studies, creating and presenting the seminar paper and project) and passing the exam (written and oral exam).								
3.2. Monitoring student work	Atten	Attendance 0,25		Written	exam	2 (without colloquiums)	Project		
(enter the share of ECTS credits for each activity so that the total	Exper	Experimental work		Researc	h		Practical work		
number of ECTS points corresponds to the credit score	Essay	Essay		Report			Continuous examination		
of the course)	Collo	quium	3 (without the writte and oral exams)	n Seminar	r paper	0,75	Other (inscribe)		

	Class activities	,	Oral exam	`	without loquiums)	Other (inscribe)		
	The student's workload or  9. Attending class	Commitment	*	hours of wor	rs of work per semester and is estimated as:  Hours (estimate)  45			
3.3. Student workload	10. Creating and Pr	Presenting seminar paper			10			
4. GRADING SYSTEM	11. Preparation for	r the Colloquium / exam t		65				
	Valuation Element	Poor	Poor		Satisfying		Above average	
	Organization	The paper is not organ order and its structure	_	clear disti	is well structured v tinction between n, the main part of th clusion.	the distinction b main part of	well-structured with a clear etween the introduction, the the text and the conclusions ectly logically linked to one	
4.1. Seminar paper grading	Terminology, writing style	Words and phras harmonized with offic Writing style is no sentences are too vocabulary, and freque grammatical mistakes.	cial terminology. not appropriate, long, modest uent and repeated	official terminis appropriate clear, the v	phrases are aligned ninology. The writing te, the sentence struct vocabulary is appro e grammatical errors.	g style eture is opriate official term understandin writing style clear and con	phrases are aligned with minology and show an g of their meaning. The is excellent, the sentences are noise, the vocabulary is rich no grammatical errors.	
	Quoting and references do not material research topic.		tch the topic and	Sources are listed, but incomplet with errors. The references appropriate for the subject and statisfactory research attitude.		s are consistent. The show a their list is "i	he references are appropriate, rich" and comprehensive and last research approach.	
	Poo	or		Satisfying		Above average		
4.2. Colloquium / exam grading	Give answer by nunderstanding. Does not apply the basic terms apply or explain the contact.	transfers new ki	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.		evaluation. It observes legitimacy, accurately and			

				_	ginally given. There is relative subjects.	s a correlation with	
	Active participation	70 of attendance	71-80% of attendance	81-90% of at	tendance	91-100%	
	in the lessons	2 points	3 points	4 poin	its	5 points	
	Research paper	2	3	4		5	
4.3. Creating a final grade	Research paper	8 points	10 points	12 poir	nts	15 points	
according to evaluation		2	3	4		5	
elements	Colloquium / written exam	50-64,9%	65-79,9%	80-89,9	9%	90-100%	
		25 points	35 points	40 poir	nts	50 points	
	Oral exam	2	3	5	5		
	Orai exam	15 points	20 points	25 poir	ts 30 points		
		opted knowledge, skills and (teaching + final exam)	Numerous grade		ECTS gra	de	
4.4. Creating a final grade		90 – 100%	5 (excellent)		A		
according to absolute allocation		80 – 89,9%	4 (very good)		В		
		65 – 79,9%	3 (good)		С		
		50 – 64,9% 2 (sufficient)				D	
5. ADDITIONAL INFORMAT	ION ABOUT THE CO	URSE					
5.1. Compulsory literature		Tit			Number of copies in the library	Availability via other media	
(available in the library and through other media)		owledge of goods. Internal scr owledge of goods and quality r	4	e-learning			

	5.2. Additional literature (at the moment of changes and/or amended of study programme)	Andrijanić, I., Balen, M., Lazibat, T. (2001). Knowledge of merchandise in commerce. Mikrorad, Zagreb. (Chapters selected)  Štrumberger, N. (2000). Handling of materials in traffic. Faculty of transport and traffic sciences, University of Zagreb, Zagreb. (Chapters selected)	4	
•	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 ensure attendance and student activity during classes and provided information on students' progress through sh further guidance to students will be provided in order to increase the efficiency of their work. Students will as well as the methods of work and the required literature. Indicators of quality assurance system: Stud Croatian employment service on the annual state of student employment, surveys from employers and Alicenters.	ort colloquiums and hom ll be informed about the ent survey, monitoring o	nework, information for ir rights and obligations
	5.4. information on the course and contact with the teacher	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. teaching will be published on the e-learning pages of the course and on the web pages of the Šibenik Unit the consultation term (at least one hour per week), while brief questions and explanations can be address by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short receipt of e-mail).	versity. Students can con ed during classes. It is pe	tact the teachers during ossible to ask questions

# English language I

1. GENERAL INFORMATION ABOUT THE COURSE									
1.1. Course title	ENGLISH LANGUAGE I	1.8. Course code in ISVU	129833 / 202067						
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	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 (professional undergraduate, and professional 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> , 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	X yes □ no						
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									
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	Four-year secondary education completed; qualifi								
2.3. Learning outcomes on the study programme level	in Croatian and English.	echnology and organization of road traffic in written and oral	•						
study programme level	LO2: To organize and implement team work, and	critically judge the opinions and attitudes of team members.							

LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions.									
	Leari	ning outcomes accroding to the Bl	oom`s taxono	my: (up to two verbs per LO)		Level of LO: 1- remembering, 2- understanding 3- application, 4- analysis, 5- evaluation, 6- synthesis	,		
	<ol> <li>to understand, apply and link basic terms from the professional terminology of English road traffic and use them in written and oral communication.</li> </ol>								
	2	. to apply grammatical structures		3					
	3	. to interpret and use tenses in rea	3, 4						
	4	3							
	5. to reproduce an e-mail in English.						3		
	6			the subjects of the course, to express	one own opinions.	6			
		. to compare and evaluate differe				5			
		. to analyse medium complex tex				4			
	9	. to use part of the general langua	age competen	cy at levels B1/B2.		6			
	Cons	tructive allignement							
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation		Time needed		
2.5. Course content according to detailed curriculum schedule	31.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-		2 h		
	32.	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 written and applied grammatical structures are evaluated, understand, app from the professional termine	on texts and tasks ly and link terms	4 h		

			1				
						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.	
						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	
			Helen Catches The Train –		Listen to lectures and read	languages within the course topic, express their	
		33.	Izražavanje Sadašnjosti (Present	1 2 2 0	literature. Use multimedia and	own opinions, present their own ideas related to	4 h
		33.	Simple And Continuous)	1, 2, 3, 9	internet. Solve exercises.	the development of transport solutions to develop	4 11
			Simple And Continuous)			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	
			In The Train – Trouble With The		Listen to lectures and read	languages within the course topic, express their	
		34.	In The Train – Trouble With The Car (Present Simple And Continuous).		literature. Use multimedia and	own opinions, present their own ideas related to	4 h
		J-1.			internet. Solve exercises.	the development of transport solutions to develop	711
			Continuous).		internet. Solve exercises.	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	
		35. P	At The Airport And Air		Listen to lectures and read	applied grammatical structures on texts and tasks	
			-	1, 2, 3, 6,	literature. Use multimedia and	are evaluated, verb tenses are interpreted in a real	4 h
			Pollution Problem (Present Tenses)	9	internet. Solve exercises.	linguistic context, can communicate in foreign	
						languages within the course topic, express their	
						own opinions, present their own ideas related to	

36.	Keeping Drunken Drivers Off The Road – Past And Perfect Tenses	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	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.  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	4 h
37.	Types Of Drivers – Verb 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.	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 at B1 level.	6 h
38.	Moving About Towns – Verb Tenses I colloquium	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	10 h

					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.	
	39.	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
	40.	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 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

		T	T		,	1
	41.	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.	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
	42.	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.	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
	43.	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	4 h

				and solve tasks, use part of other language competences at B1 level.	
44.	"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 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
45.	Revision – II colloquium	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 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

#### 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 students attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student produces 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

	outcomes are: essays oneself about the cou	ritten part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning attempts are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform neself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University 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.								
	Attendance	0,5	Writter	n exam	1 (witho	out colloquia	a) Project			
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Resear	ch			Practical work			
for each activity so that the total number of ECTS points corresponds to the credit score	Essay		Report				Continuous examination			
of the course)	Colloquium	1 (without written exa	am) Semina	ar paper			Other			
,	Class activity	0,5	Oral ex	kam	1		Other			
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:									
3.3. Student workload		Comn	nitment				Hours (estimate	2)		
	12. Attending	classes and exercises					45			
	13. Preparatio	n for the Colloquium	/ exam through	self-study		45				
4. GRADING SYSTEM										
4.1. Grading seminar papers										
	Unsatis	sfactory		Satisfactor	y		Above a	verage		
4.2. Grading colloquia/ written and oral exam	understanding. Doe basic terms and c know how to app	basic terms and concepts. Does not know how to apply or explain the			oduces the basic concepts and without rulty imparts new knowledge, restands the material, explains the terms oncepts 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.			
4.3. Final grade according to	Active course	70-75% of	attendance 76-86% of atte		% of attendance		87-100% of attendance	Maximum points		
evaluation elements	attendance	3 po	oints	nts 7 points			20 points	20 points		

	Seminar paper						
		2	3	4	5		
	Colloquia/ Written exam	50-64,9%	65-79,9%	80-89,9%	90-100%		
	CAUIII	25 points	30 points	35 points	40 points		
	Oral exam	2	3	4	5		
	Orai exam	25 points	30 points	35 points	40 points		
		uired knowledge, skills and (teaching + final exam)	5 (excellent)		ECTS grade		
4.2. Einel and according to	9	90 – 100%	4 (very good)		A		
4.3. Final grade according to absolute division	8	80 – 89,9%	3 (good)		В		
	65 – 79,9%		2 (sufficient)		С		
	5	60 – 64,9%	5 (excellent)		D		

### 5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via	Title	Number of copies in the library	Availability via other media
other media)	Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport and traffic sciences,	10	Y
	University of Zagreb, Zagreb, 2002. (selected chapters)	10	Λ
	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", Department for traffic, Polytechnic of Rijeka,		
5.2 Additional literature (at	2007.		X (e-learning,
the moment of changes and/or	Adrian Pilbeam, Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010	10	handouts)
amended of study programme)	A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University		nandouts)
	A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University		
	A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University		

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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).

# English language II

1. GENERAL INFORMATION	1. GENERAL INFORMATION ABOUT THE COURSE						
1.1. Course title	ENGLISH LANGUAGE II	1.8. Course code in ISVU	187599 / 202076				
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-				
1.3. Assistants and/or associates	Ivana Jardas Duvnjak, professor, title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30+15+0+0)				
1.4. Study programme (professional undergraduate, and professional 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> , 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	X yes □ no				
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							
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 different kinds of business letters. By attending a foreign language classes, students are introduced with new communication systems, enabling their easier and more direct involvement in world events and getting acquainted with the elements of English culture and civilization of the English speaking world. Learning a foreign language is in line with the aspiration to preserve the richness of the diversity of multi-faceted Europe as well as with fostering the development of the culture of dialogue and civilization.						
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF, Completed course English language I						
2.3. Learning outcomes on the	LO1: To apply and link professional terms from to in Croatian and English.	echnology and organization of road traffic in written and ora	l communication with the professional public				
study programme level	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members.						

	LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions.						
	Learı	rning outcomes accroding to the	Level of LO: 1- remembering 2- understandin 3- application, 4- analysis, 5- evaluation, 6- synthesis	*			
	1	to understand and apply be	asic terms fror	m the professional terminology of Engli	tish road traffic in English.	2, 3	
	2	2. to apply grammatical structu	ures in texts a	nd assignments.		3	
	3.	3. to interpret and use tenses in	n real-life con	text.		3, 4	
	4	4. to develop an essay within t	the topics of th	ne course.		5, 6	
!	5	5. to present own ideas for dev	velopment of t	raffic problems.		3	
!	6	to communicate in a foreign	n language wit	thin the subjects of the course, to expres	ess one own opinions.	6	
!	7	7. to compare and evaluate dif	fferent traffic s	solutions.		5	
!	8	8. to analyse medium complex	x texts and sol	ve tasks.		4	
	9	9. to use part of the general lar	nguage compe	tency at levels B1.		6	
	Cons	structive allignement					
1	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation		Time needed
2.5. Course content according to detailed curriculum schedule	46.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-		2 h
		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 and of applied grammatical structures on are evaluated, understand, apply from the professional terminolo- road traffic and use them in w	n texts and tasks and link terms ogy of English	4 h

			Т			<del></del>
					communication verb tenses are interpreted in a real linguistic context, use part of other language competences at B1 level.	
	48.	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
	49.	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 tasks, use part of other language competences at B1 level.	4 h
	50.	MODERN TRANSPORTATION (HYDROFOILS) – Modal verbs	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	4 h

1							1		
						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			
			RAIL TRAFFIC IN		Listen to lectures and read	languages within the course topic, express their			
		51.	EUROPE – Expressing	1, 2, 3, 5,	literature. Use multimedia and	own opinions, present their own ideas related to	4 h		
			habit	6, 9	internet. Solve exercises.	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.			
						In colloquium or written and oral exams the			
						applied grammatical structures on texts and tasks			
							Listen to lectures and read	are evaluated, verb tenses are interpreted in a real	
									literature. During lectures
					individually research the content of	languages within the course topic, express their			
		52.	Traffic in the USA – Tenses	1, 2, 3, 5,	this thematic field by searching data	own opinions, present their own ideas related to	6 h		
		02.	Traine in the OBIT Tenses	6, 9	bases, presentt acquired knowledge,	the development of transport solutions to develop	0 11		
					express their own ideas and ways of	a longer essay within course topics, comparing			
					problem solving. Brainstorming,	and evaluating different solutions in the traffic of			
					discussion. Solve exercises.	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			
		1 5 5	Traffic for tomorrow –	1, 2, 3, 5,	Listen to lectures and take part in	applied grammatical structures on texts and tasks			
			Traffic for tomorrow – Tenses, I colloquium	6, 9	discussion. Write the colloquium.	are evaluated, verb tenses are interpreted in a real	10 h		
				0, )	discussion. Write the conoquium.	linguistic context, can communicate in foreign			
						languages within the course topic, express their			
				-					

Г		Т	T		T		
						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.	
						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	
		<i>-</i> 4	Hovercraft – Indirect	1, 2, 3, 5,	Listen to lectures and read	own opinions, present their own ideas related to	(1
		54.	speech	6, 9	Literature Solve exercises	the development of transport solutions to develop	6 h
			-			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 within the course topic, express their	
			Magnetic levitation trains –	1, 2, 3, 5,	Listen to lectures and read	own opinions, present their own ideas related to	
		55.	Personal and reflexive	6, 9	literature. Solve exercises. Discuss.	the development of transport solutions to develop	6 h
			pronouns	, -		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.	
					Listen to lectures and read	In colloquium or written and oral exams the	
		56.	Steam engine cars – Future	1, 2, 3, 5,	literature. Use multimedia and	applied grammatical structures on texts and tasks	10 h
			tenses	6, 9	internet. Solve exercises.	are evaluated, verb tenses are interpreted in a real	
L						and a saladad, solo tonioto 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.	
	57.	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
	58.	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 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

	59.	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
	60.	Revision – II colloquium	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 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

#### 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 students attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student produces 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 final exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform

		oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University 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.						
	Attendance 0	,5	Written exa	m 1	(without colloqui	ia) Project		
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research			Practical work		
for each activity so that the total number of ECTS points	Essay		Report			Continuous examination		
corresponds to the credit score of the course)	(Colloguium	(without written xam)	Seminar pap	oer		Other		
	Class activity 0	,5	Oral exam	1		Other		
	The student's workloa			oint for 30 hour	of work per sem	nester and is estimated as:		
		Comi	mitment			Hours (estimate	e)	
3.3. Student workload	1. Attending of	classes and exercises	3		45			
	2. Preparation	for the Colloquium	/ exam through	self-study		45		
4. GRADING SYSTEM								
4.1. Grading seminar papers	-							
	Unsatist	factory		Satisfactory		Above a	average	
4.2. Grading colloquia/ written and oral exam	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.		difficulty in understands the	Reproduces the basic concepts and w difficulty imparts new know understands the material, explains the and concepts supported with examples.		Knowledge is at the level evaluation. Observes the thoroughly explains the content connects and explains the term examples. Finds solutions the Notes correlations with related	principles, accurately and t of the material, and logically as and concepts supported with at were not originally given.	
	Active course	70-75% of	attendance	76-86% c	f attendance	87-100% of attendance	Maximum points	
4.3. Final grade according to evaluation elements	attendance	3 pc	oints	7 <sub>I</sub>	oints	20 points	20 points	
	Seminar paper							

		2	3	4	5	
	Colloquia/ Written exam	50-64,9%	65-79,9%	80-89,9%	90-100%	
		25 points	30 points	35 points	40 points	
	Oral exam	2 3 4		4	5	
	Orar exam	25 points	30 points	35 points	40 points	
	-	knowledge, skills and competend hing + final exam)	es Numerical grade	E	ECTS grade	
4.2 E'aul and beautifue to		90 – 100%	5 (excellent)		A	
4.3. Final grade according to absolute division		80 – 89,9%	4 (very good)		В	
		65 – 79,9%	3 (good)		С	
		50 – 64,9%	2 (sufficient)		D	
				<u>.</u>		

### 5. ADDITIONAL INFORMATION ABOUT THE COURSE

that ensure the acquisition of

5.1. Compulsory literature (available in the library and via	Title	Number of copies in the library	Availability via other media
other media)	Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport nad traffic sciences,	10	X
31111	University of Zagreb, Zagreb, 2002. (selected chapters)	10	71
	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", Department for traffic, Polytechnic of Rijeka,		
5.2 Additional literature (at	2007.		V (a laamina
the moment of changes and/or	Adrian Pilbeam, Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010	10	X (e-learning,
amended of study programme)	A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University		handouts)
	A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University		
	A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University		
5.2 Quality assumance matheds	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured	through interactive work	. By keeping track of
5.3. Quality assurance methods	attendance and student activity during classes and provided information on students' progress through short	colloquiums and home	work, 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

knowledge, skills and	as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the
competences	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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).

# English language III

1. GENERAL INFORMATION	ABOUT THE COURSE							
1.1. Course title	ENGLISH LANGUAGE III	1.8. Course code in ISVU	140775 / 202089					
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-					
1.3. Assistants and/or associates	Ivana Jardas Duvnjak, professor, title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(15+30+0+0)					
1.4. Study programme (professional undergraduate, and professional 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> , 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>	1.13. Modernization	X yes □ no					
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								
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 creation and use of passives, causative constructions, mastery of conditional sentences, transformation of direct into reported speech in the past. 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 different kinds of business letters. By attending a foreign language classes, students are introduced with new communication systems, enabling their easier and more direct involvement in world events and getting acquainted with the elements of English culture and civilization of the English speaking world. Learning a foreign language is in line with the aspiration to preserve the richness of the diversity of multi-faceted Europe as well as with fostering the development of the culture of dialogue and civilization.							
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualifi	ication level 4.2 according to the CROQF, Completed course	e English language II					
2.3. Learning outcomes on the study programme level	LO1: To apply and link professional terms from te in Croatian and English.	echnology and organization of road traffic in written and oral	communication with the professional public					
study programme level	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members.							

	LO3: T	o individually and responsibly	search, interp	oret and integrate the relevant literature	needed to make decisions.			
	Learr	Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO)  2 2 3 4 4 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7						
	1	. to understand, apply and lin written and oral communica		n the professional terminology of Engl	lish road traffic and use them in	2, 3		
	2	. to apply grammatical structu	ares in texts a	nd assignments.		3		
	3	. to interpret and use tenses in	ı real-life con	text.		3, 4		
	4					5, 6		
	5					3		
	6			thin the subjects of the course, to expres	ss one own opinions.	6		
	7	1				5		
	8					4		
	9	1 2	iguage compe	etency at levels B1/B2.		6		
	Const	tructive allignement						
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation		Time needed	
2.5. Course content according to detailed curriculum schedule	-     6						2 h	
	62.	Britains Earliest Roads – Tenses	1, 2, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and applied grammatical structures or are evaluated, understand, apply from the professional terminole	n texts and tasks and link terms	4 h	

63.	The Age Of Bad Roads - The Passive Voice	1, 2, 3, 4, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	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.  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	
64.	Roads And The Church - The Passive Voice, Present times	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	
65.	Early Carriages - The Passive Voice, Past times	1, 2, 3, 6,	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	4 h	

				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.  In colloquium or written and oral exams the	
66.	Trade And Transport In The Turnpike Era - The Passive Voice, Future times	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	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
67.	Rivers And River Transport - The Passive Voice	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
68.	The World Of Transport - I colloquium	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	10 h

					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.		
	69.	The Satellite - The Infinitive and the Gerund	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	
	70.	Technology And The Relation Between Transport And Communication - Conditional Sentences (0 And I Type)	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	

71.	Transport, Communications And City Organisation - Conditional Sentences (II Type)	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 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	
72.	Navigation Devices - Conditional Sentences (III Type)	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	
73.	Safe And Clean Road Transport - Conditional Sentences (Mixed Types)	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	4 h	

74.	Scientific Road Making - Conditional Sentences	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.	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 at B1 level.	6 h
75.	Revision – II colloquium	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 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

#### 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 students attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written word that the student produces 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

	learning outcomes inform oneself abo	from the written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check earning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University 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.						
	Attendance	0,5	Written exam 1 (without colloque		ut colloquia)	Project		
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research			Practical work		
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		
	Class activity	0,5	Oral exam	1	_	Other		
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:							
	1	Commitment				Hours (estimo	ate)	
3.3. Student workload	3. Attendir	3. Attending classes and exercises				45		
	4. Preparat	tion for the Colloquium	/ exam through self-study			45		
4. GRADING SYSTEM								
4.1. Grading seminar papers	-							
	Unsa	atisfactory	Satisfac	ctory		Abov	ve average	
4.2. Grading colloquia/ written and oral exam	understanding. D basic terms and know how to a	mory, without a deeper Does not know or apply d concepts. Does not apply or explain the ourse 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 attendance   70-75% of attendance   76-86% of attendance   87-100% of attendance   Maximum points							
A.3. Final grade according to evaluation elements   Seminar paper   Seminar paper pape		Active course	70-75% of attendance	76-86% of attendance	87-100% of attendance	Maximum points	
4.3. Final grade according to evaluation elements    Colloquia/ Written exam		attendance	3 points	7 points	20 points	20 points	
Colloquia/Written   2   3   4   5		Seminar paper					
Colloquia/ Written exam			2	3	4	5	
25 points   30 points   35 points   40 points		1   *	50-64,9%	65-79,9%	80-89,9%	90-100%	
Oral exam  25 points  30 points  35 points  40 points  Percentage of acquired knowledge, skills and competences (teaching + final exam)  90 - 100%  50 - 100%  50 - 89,9%  4 (very good)  65 - 79,9%  3 (good)  C  50 - 64,9%  2 (sufficient)  D  5. ADDITIONAL INFORMATION ABOUT THE COURSE  5.1. Compulsory literature (available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zogreb, 2002. (selected chapters)  Tamara Polić: "The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for Lst Year Students". Department for traffic. Polytechnic of Services with Grammar and Exercises for Lst Year Students". Department for traffic. Polytechnic of Services with Grammar and Exercises for Lst Year Students". Department for traffic. Polytechnic of		CXum	25 points	30 points	35 points	40 points	
Percentage of acquired knowledge, skills and competences (teaching + final exam)  4.3. Final grade according to absolute division  A  BO = 89,9%  A (very good)  B  C = 50 - 64,9%  C = 50 - 6		01	2	3	4	5	
4.3. Final grade according to absolute division  4.3. Final grade according to absolute division  5. ADDITIONAL INFORMATION ABOUT THE COURSE  5.1. Compulsory literature (available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)  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". Department for traffic, Polytechnic of Services with Grammar and Exercises for 1st Year Students". Department for traffic, Polytechnic of		Orai exam	25 points	30 points	35 points	40 points	
4.3. Final grade according to absolute division  80 - 89,9%  4 (very good)  B  65 - 79,9%  3 (good)  C  50 - 64,9%  2 (sufficient)  5. ADDITIONAL INFORMATION ABOUT THE COURSE  5.1. Compulsory literature (available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)  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". Department for traffic. Polytechnic of		_	-	Numerical grade	ECTS gr	rade	
absolute division  80 - 89,9% 4 (very good)  65 - 79,9% 3 (good)  C  50 - 64,9% 2 (sufficient)  D  5. ADDITIONAL INFORMATION ABOUT THE COURSE  5.1. Compulsory literature (available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)  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". Department for traffic, Polytechnic of	40 5: 1		90 – 100%	5 (excellent)	A		
5. ADDITIONAL INFORMATION ABOUT THE COURSE  5.1. Compulsory literature (available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)  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". Department for traffic, Polytechnic of			80 – 89,9%	4 (very good)	В	В	
5. ADDITIONAL INFORMATION ABOUT THE COURSE  5.1. Compulsory literature (available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, 2002. (selected chapters)  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", Department for traffic, Polytechnic of			65 – 79,9%	3 (good)	С	С	
5.1. Compulsory literature (available in the library and via other media)  Title  Ratia Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)  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", Department for traffic, Polytechnic of			50 – 64,9%	2 (sufficient)	D		
(available in the library and via other media)  Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)  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", Department for traffic, Polytechnic of	5. ADDITIONAL INFORMATI	ION ABOUT THE COU	RSE				
Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, 2002. (selected chapters)  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", Department for traffic, Polytechnic of	* *		Title		_	7	
5.2. Additional literature (at Services with Grammar and Exercises for 1st Year Students", Department for traffic, Polytechnic of	· ·	=		ences, 10	X		
Y to looming	5.2 Additional literature (at	Tamara Polić: "The Engl	lish Langzage I and II, English Tex			X (e-learning.	

Adrian Pilbeam and Nina O'Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010

A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University

the moment of changes and/or

amended of study programme)

Rijeka, 2007.

X (e-learning,

handouts)

10

	A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University					
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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).					

# English language IV

1. GENERAL INFORMATION	ABOUT THE COURSE					
1.1. Course title	ENGLISH LANGUAGE IV	1.8. Course code in ISVU	140784 / 202097			
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-			
1.3. Assistants and/or associates	Ivana Jardas Duvnjak, professor, title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(15 + 30 + 0 + 0)			
1.4. Study programme (professional undergraduate, and professional 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> , 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	2 <sup>nd</sup>	1.13. Modernization	X yes □ no			
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						
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 to write different kinds of business letters. By attending a foreign language classes, students are introduced with new communication systems, enabling their easier and more direct involvement in world events and getting acquainted with the elements of English culture and civilization of the English speaking world. Learning a foreign language is in line with the aspiration to preserve the richness of the diversity of multi-faceted Europe as well as with fostering the development of the culture of dialogue and civilization.					
2.2. Terms of course entry and required competences	, , ,	cation level 4.2 according to the CROQF, Completed course				
2.3. Learning outcomes on the	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.					
study programme level	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members.					

	LO3: T	Γο individually and responsibly se						
		rning outcomes accroding to the E				Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis		
	1.	to understand, apply and link     written and oral communication	ish road traffic and use them in	0- synthesis 2, 3				
	2	2. to create CV (Europass templa				3, 4, 6		
	3.	r				3, 4		
	4.	1 0 7				5, 6	5, 6	
	5.	1				3		
	6.			in the subjects of the course, to express	s one own opinions.	6		
		7. to compare and evaluate differ		utions.		5		
		8. to analyse complex texts and s				4		
		9. to use part of the general lange	,uage competer	ncy at levels B1/B2.		6		
	Const	structive allignement						
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation		Time needed	
2.5. Course content according to detailed curriculum schedule	9   1 / 6						2 h	
	77.	Early Trading Conditions – Tenses CV – Europass template	1, 2, 9	Internet Solve exercises	In colloquium or written and applied grammatical structures of are evaluated, understand, applied from the professional terminolog	on texts and tasks oly and link terms	4 h	

	Г						T
						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.	
		78.	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
		79.	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
		80.	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	4 h

				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.  In colloquium or written and oral exams the	
81.	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.	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
82.	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
83.	The World Of Transport - I colloquium	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	10 h

					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	
	84.	Professionalism In The Public Sector - Defining Relative Clauses	1, 3, 5, 6, 9	Listen to lectures and read literature. Solve exercises.	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 at B1 level.	6 h
	85.	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 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

		T	T			
	86.	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
	87.	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
	88.	The Modern Wonder Of Electronics - Business Letters - Job Interview	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	4 h

				and solve tasks, use part of other language competences at B1 level.	
89.	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
90.	Revision – II colloquium	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 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

#### 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 students attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student produces 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

	outcomes are: essa oneself about the c	written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check lead outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly into oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik Universidad 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 availated.							
	Attendance	0,5	Written exam	1 (w	vithout colloquia	a) Project			
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research			Practical work			
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			
	Class activity	0,5	Oral exam	1		Other			
3.3. Student workload	The student's work  Commits	kload on all bases amoun	ts to 1 ECTS point for 3	f work per seme	ester and is estimated as:  Hours (estimate)				
5.5. Student Workload	5. Attendin	ng classes and exercises		+		45			
	6. Preparat	tion for the Colloquium /	exam through self-stud	ly		45			
4. GRADING SYSTEM									
4.1. Grading seminar papers	-								
	Unsa	atisfactory	Satisfa	actory		Above averag	9		
4.2. Grading colloquia/ written and oral exam	understanding. Do basic terms and know how to a	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.  Reproduces the basic concepts difficulty imparts new understands the material, explain and concepts supported with examples.			and without knowledge, ins the terms mples.	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.			
4.3. Final grade according to evaluation elements	70-75% of attendance 76-8				attendance	87-100% of attendance	Maximum points		

	Active course attendance	3 points	7 points	20 points	20 points
	Seminar paper				
	Semmar paper				
		2	3	4	5
	Colloquia/ Written exam	50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	4	5
	Orai exam	25 points	30 points	35 points	40 points
		d knowledge, skills and competence ching + final exam)	Numerical grade	E	CTS grade
4.2 E'1 1 1' 4-		90 – 100%	5 (excellent)		A
4.3. Final grade according to absolute division		80 – 89,9%	4 (very good)		В
		65 – 79,9%	3 (good)		С
		50 - 64,9%	2 (sufficient)	2 (sufficient)	
			•		

#### 5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)	10	X
5.2 Additional literature (at the moment of changes and/or amended of study programme)	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", Department for Traffic, Polytechnic of Rijeka, 2007.  Adrian Pilbeam, Nina O`Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010  A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University  A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University	10	X (e-learning, handouts)

	A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University		
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 attendance and student activity during classes and provided information on students` progress through shor further guidance to students will be provided in order to increase the efficiency of their work. Students will as well as the methods of work and the required literature. Indicators of quality assurance system: Student Croatian employment service on the annual state of student employment, surveys from employers and Alum	rt colloquiums and home be informed about their nt survey, monitoring of	work, information for rights and obligations
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 coursework, and the possible adjournment will be published in a timely manner on the e-learning site of the course and on the v contact teachers during the consultation period (at least one hour per week), while for short questions and extra also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be a working days after receiving the e-mail).	vebsite of the Šibenik Ur xplanations they can be c	niversity. Students can contacted during class.

# **Graphic communications**

1. GENERAL INFORMATION	ABOUT THE COURSE					
1.1. Course title	GRAPHIC COMMUNICATIONS	1.8. Course code in ISVU	201132 / 202070			
1.2. Course lecturer	Luka Olivari, master of mech., senior lecturer	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)			
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd 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	5			
1.6. Year of study	1 <sup>st</sup>	1.13. Modernization	X yes □ no			
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 %			
2. COURSE DESCRIPTION						
2.1. Course objectives	The aim of the course is to provide students with theoretical knowledge, acquired skills and practical examples to: Gain the knowledge and skills necessary to read, understand and produce technical drawings, use and understand the standards of drawing in technical drawings, orthogonal projections, spatial rendering and cross sections, they use computers (the Auto-CAD computer program) when creating technical documentation.					
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualificati	Four-year secondary education completed; qualification level 4.2 according to the CROQF.				
	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic.					
2.3. Learning outcomes on the study programme level	LO7: To apply computer tools for analysis and comp	arison of data, and suggest an optimal solution in traffic process.				
study programme lever	LO8: To solve problems in traffic by using analytical and / or graphical method.					
	<b>Learning outcomes</b> by Bloom: (maximum 2 werbs f	for LO)	Level of LO: 1- memory, 2- understanding,			

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.  4  5, 5  5, 5  5, 5	
2.5. Course content according to detailed curriculum schedule	Constructive allignement						
	No	Thematic unit	LO of the course	Content/teaching methods	Eva	aluation	Time needed
	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 or the written and oral exam they define and explain the basic concepts.  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.		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.			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.	exam: define ar concepts; draw based on a gi	or the written and oral and explain the basic orthogonal projections iven isometric view; een the rules of the	4 h

		1		T		1
					technical layout and apply them to the	
					technical drawing.	
	4.	Technical spatial sketching and construction. Orthogonal projections. European and American display mode.	1, 2, 3	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; 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
	8.	Spatial presentation.	1, 3, 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; form an isometric representation of the body based on given orthogonal projections; distinguish	4 h

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					between the rules of the technical view	
					and apply them to the technical drawing.	
	9.	Introduction to Computer-Aided Design. CAD / CAM systems. Software packages and scope.	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
	10.	Special markings on technical drawings and simplifications. Details on technical drawings. AutoCAD, interface and basic commands.	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
	11.	AutoCAD, commands for drawing, using and creating a new layer.	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
	12.	AutoCAD, commands for applying measures, creating a template, printing drawings.	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
	13.	AutoCAD, creation and manipulation of objects.	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	4 h

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)	1	'				drawing in an AutoCA	D computer								
						program.									
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ļ	Review, recapi preparation for t	self-made		Listen to a lecture a	and read literature. The	_									
14.	*		1, 4, 5	exercises demonstrat	te the rules of technical	_ = =	-	4 h							
ļ	Workshop drawn	18.		presentation. Indepe	ndent exercise.	_									
ļ	1	,				drawing in an AutoCA	D computer								
	1	·				program.									
15	Review, recapit	ulation, and		Listen to a lecture ar	nd read literature. They			4 h							
13.	preparation for the	ne exam.	1	prepare individually	for the exam.	-		711							
T WOR	.K														
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		o ways: a) du	ring the course	e by passing two cono	quiums and the orai par	t of the exam; b) by passing u	ne written and o	written and oral parts							
		Т2		TW-itton aware	2 (without	D:- at									
Attendu	ng classes	2		Written exam	`	Project									
T				Discount	Colloquiums)	Donation I month									
	nentai work														
Essay				Report		Continuous check									
Colloqu	ıiums	2 (without v	written	Seminar paper		Field works or Study trips									
		exam)													
Teachir	ng activities			The oral part of	1	(other)									
				exam				ļ							
The stu	dent's workload or	n all bases am	ounts to 1 EC	TS point for 30 hours	<u></u>	d is estimated as:		exam							
Obligation					of work per semester and										
			bligation		of work per semester an	Hours (estimated)									
7.	. Attending class	0	Obligation		of work per semester an										
	In accordattend of solving and mu exam for of the example.  Experimental Experiment	Review, recapite preparation for the WORK  In accordance with the Ru attend classes at least 70% solving tasks and participa and must take and pass a exam for the course in two of the exam.  Attending classes  Experimental work  Essay  Colloquiums	14. Review, recapitulation, and preparation for the exam.  T WORK  In accordance with the Rulebook on St attend classes at least 70%, which is a solving tasks and participating in lectur and must take and pass a written exam exam for the course in two ways: a) durof the exam.  Attending classes  2  Experimental work  Essay  Colloquiums  2 (without wexam)  Teaching activities	14. workshop drawing.  15. Review, recapitulation, and preparation for the exam.  16. Review, recapitulation, and preparation for the exam.  17. WORK  In accordance with the Rulebook on Study and the Rattend classes at least 70%, which is also a requirent solving tasks and participating in lectures and exercise and must take and pass a written exam (test), more the exam for the course in two ways: a) during the course of the exam.  Attending classes  2  Experimental work  Essay  Colloquiums  2 (without written exam)  Teaching activities	AutoCAD, self-made workshop drawing.  1, 4, 5  Review, recapitulation, and preparation for the exam.  Listen to a lecture are prepare individually.  WORK  In accordance with the Rulebook on Study and the Rulebook on Assessme attend classes at least 70%, which is also a requirement for obtaining the solving tasks and participating in lectures and exercises. Students who achie and must take and pass a written exam (test), more than 50% - students ea exam for the course in two ways: a) during the course by passing two collor of the exam.  Attending classes  2  Written exam  Experimental work  Essay  Report  Colloquiums  2 (without written exam)  The oral part of exam	11.4.5 exercises demonstrate the rules of technical presentation. Independent exercise.  15. Review, recapitulation, and preparation for the exam.  16. Review, recapitulation, and preparation for the exam.  17. WORK  In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of St attend classes at least 70%, which is also a requirement for obtaining the lecturer's signature. St solving tasks and participating in lectures and exercises. Students who achieve the following during and must take and pass a written exam (test), more than 50% - students earn the right to take the exam for the course in two ways: a) during the course by passing two colloquiums and the oral par of the exam.  Attending classes  2 Written exam  2 (without colloquiums)  Experimental work  Research  Report  Colloquiums  2 (without written exam)  The oral part of exam  1 exercises demonstrate the rules of technical presentation. Independent exercises.	AutoCAD, self-made workshop drawing.  1. 4. 5  Review, recapitulation, and preparation for the exam.  1. 4. 5  In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of Student Performance: Full-time attend classes at least 70%, which is also a requirement for obtaining the lecture's signature. Students are required to bring solving tasks and participating in lectures and exercises. Students who achieve the following during the course: from 0 to 49.9% and must take and pass a written exam (test), more than 50% - students earn the right to take the final exam for the course. Stuexam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the students are required to bring the exam.  Attending classes  2 Written exam  2 (without colloquiums)  Experimental work  Research  Report  Continuous check  Colloquiums  2 (without written exam)  Field works or Study trips exam)  The oral part of 1 (other)	AutoCAD, self-made workshop drawing.  1, 4, 5  Review, recapitulation, and preparation for the exam.  Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.  Listen to a lecture and read literature. The exercises demonstrate the rules of technical drawing: draw a technical drawing in an AutoCAD computer program.  15. Review, recapitulation, and preparation for the exam.  Listen to a lecture and read literature. They prepare individually for the exam.  Listen to a lecture and read literature. They program.  **TWORK**  In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of Student Performance: Full-time students are reattend classes at least 70%, which is also a requirement for obtaining the lecturer's signature. Students are required to bring equipment nece solving tasks and participating in lectures and exercises. Students who achieve the following during the course: from 0 to 49.9% of ECTS are grand must take and pass a written exam (test), more than 50% - students carn the right to take the final exam for the course. Students can pass exam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the written and of the exam.  Attending classes  2 Written exam  2 (without colloquiums)  Experimental work  Research  Report  Continuous check  Colloquiums  Field works or Study trips exam)  The oral part of 1 (other)							

8. Preparation for the Colloquium / exam through self-study	30
(drawing)	
9. Preparation for the Colloquium / exam through self-study	30
(AutoCAD)	
10. Oral exam individual preparation	30

## 4. GRADING SYSTEM

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

	Colloquiums/	2	3	4		5	
4.3. Forming the final grade	Written exam	10-12 points	13-15 points	16-	17 points	18-20 points	
according to the evaluation	Colloquiums/	2	3		4	5	
elements	AutoCAD	10-12 points	13-15 points	16-	17 points	18-20 points	
	The oral part of exem	2	3	4		5	
		10-12 points	13-15 points	16-17 points		18-20 points	
	Percentage of acquired knowledge, skills and competencies (teaching + final exam)		Numerical grade		ECTS grade		
4.4. Formation of the final grade	90 -	- 100%	5 (excellent)		A		
pased on the absolute	80 – 89,9%		4 (very good)		В		
distribution	65 –	79,9%	3 (good)		С		
	50 - 64,9%		2 (sufficient)		D		
5. ADDITIONAL INFORMAT	TON ABOUT THE COU	RSE					
J. ADDITIONAL INFORMAT	TON ABOUT THE COU	NOL .			Number of		

5.1. Compulsory literature (available in the library and via other media)	Title I	Number of copies in the library	Availability via other media
Other media)	Koludrović, Ć.: Technical drawing in the image with computer applications, Rijeka, 2009.	_	City library
	George O.: Basics of AutoCAD software 2008, MIŠ d.o.o. Zagreb, 2007.	-	City library
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from the lectures and exercises on the e-learning system of the Šibenik University of Applied Sciences for the course.  Opalić, M., Kljajin, M., Sebastijanović, S.: Technical drawing, Zrinski d.d., Čakovec/Slavonski Brod, 2007.  Klem N., Koški Ž., Otković I.: Technical drawing and CAD, Faculty of civil engineering, University of Osijek, Osijek 2006.  Galeta T., Glazina V., Kljajin M.: AutoCAD Fundamentals of Technical Drawing, Faculty of mechanical engineering, University of Osijek, Slavonski brod, 2005.		on-line (e-learning)  On-line On-line

	Herold Z .: Computer and Engineering Graphics, Faculty of mechanical and naval engineering,				
	University of Zagreb, Zagreb 2003.				
	Budimir D .: Exercises from AutoCAD, Faculty of transport and traffic sciences, University of				
	Zagreb, Zagreb 2010.				
5.2 Quality assumance matheds	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of				
5.3. Quality assurance methods	attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for				
that ensure the acquisition of	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				
knowledge, skills and	as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the				
competences	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 classes or possible				
5.4. Informing about the course	adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact				
and contacting the course	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				
lecturer	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).				

# Theory of vehicle movement

1. GENERAL INFORMATION ABOUT THE COURSE						
1.1. Course title	THEORY OF VEHICLE MOVEMENT	1.8. Course code in ISVU	142538 / 202104			
1.2. Course lecturer	Luka Olivari, master of mech., senior lecturer	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+15+0+0)			
1.4. Study programme (professional undergraduate, and professional 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%)	1st, course materials are on-line, 0%			
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	7.			
1.6. Year of study	2 <sup>nd</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% X More than 20 % □			
2. COURSE DESCRIPTION						
2.1. Course objectives	The aim of the course is to provide students with theoret the vehicle dynamics problems.	ical knowledge and practical examples to acquire the knowl	edge necessary to successfully solve			
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF					
	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.					
2.3. Learning outcomes on the study programme level	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members.					
study programme level	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic.					
	LO7: To apply computer tools for analysis and comparis	on of data, and suggest an optimal solution in traffic process	3.			

	LO8: T	O8: To solve problems in traffic by using analytical and / or graphical methods.						
	LO13: 1	LO13: To track trends in the development of technique, technology and safety in traffic.						
						Level of LO:		
						1- memory,		
						2- understanding,		
	Learni	ing outcomes by Bloom: (maximum	m 2 werbs for I	JO)		3- application,		
						4- analysis,		
						5- evaluation,		
2.4. Expected learning outcomes	<u> </u>					6- synthesis.		
on the course level (4-10	1.	Differentiate concepts in vehicle	dynamics.			5		
learning outcomes)	2.	Distinguish the drive engines, co	ncepts and eler	ments of transmission of road vehicles.		5		
	3.	Formulate the final equation of movement of the vehicle.	motion of the	e vehicle based on the traction forces	and the resistance of the	6		
	4. Evaluate the fuel economy of a road vehicle.							
	5.	Analyze the properties and perfo	rmance of the r	road vehicle under different operating co	onditions.	5		
<u> </u>	6.	Perform vehicle dynamics calcul				6		
2.5. Course content according to detailed curriculum schedule		ructive allignement						
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	n	Time needed	
	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 and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the exam, students: differential statics; solve numerical prospecified unit.	ate concepts from	4 h	
	2.	Construction of motor vehicles. IC engines. Power transmission.	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks.	At the colloquium or the exam, students: differential statics; solve numerical prospecified unit.	ate concepts from	4 h	

		T		<u> </u>	T	
				Independent task solving. Individual		
				preparation for colloquiums.		
	3.	Forces on the vehicle. Static and dynamic axle reactions.	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	4.	Tire. Tire hysteresis. Rolling resistance factor. Wheel slipping and rolling.	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	5.	Movement resistances. Rolling resistance. Air resistance. Climb resistance. Inertia resistance.	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	6.	Traction force. Traction force hyperbole. Traction diagram. Adhesion force.	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	7.	Engine characteristic. Engine elasticity. Power balance. Traction-speed characteristics.	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	8.	Vehicle economy. Fuel consumption equation.	1, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h

		T		T		
	9.	Vehicle steering. Oversteering and understeering.	1,5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	10.	Vehicle stability. Longitudinal and transverse stability.	1, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	11.	Acceleration. Dynamic characteristic. Time and path of acceleration. Overtaking.	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	12.	Braking. Braking characteristic. Distribution of braking forces.	1, 3, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	13.	Active stability systems.  Braking with active stability systems.  Anti-blocking devices.	1,5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	14.	Vehicle dynamics calculations.	3, 5, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit. Submit vehicle dynamics calculation.	4 h
	15.	Review, recapitulation, and preparation for the exam.	-	Listen to a lecture and read literature. Prepare individually for the exam.	-	4 h

3. EVALUATION OF STUDEN	T WORK							
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. All students must submit seminar paper (vehicle dynamics calculation), which is also a requirement for obtaining the lecturer's signature. Students are required to bring a calculator and other equipment necessary for solving tasks and participating in lectures and exercises. Students who achieve the following during the course: from 0 to 49.9% of ECTS are graded F (fail) and must take and pass a written exam (test), more than 50% students earn the right to take the final exam for the course. Students can pass the final exam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the written and oral parts of the exam.							
3.2. Student work monitoring	Attending classes	2	Written exam	1 (without colloquiums)	Project			
(enter the share of ECTS credits	Experimental work		Research		Practical work			
for each activity so that the total	Essay		Report		Continuous check			
number of ECTS credits corresponds to the course credit	Colloquiums	1 (without written exam)	Seminar paper	0,5	Field works or Study trips	7		
value)	Teaching activities		The oral part of exam	0,5	(other)			
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:							
		Obligation		Hours (estimated)				
	11. Attending classe	es		60				
3.3. Student work-load	12. Creating and Pr	esenting seminar paper		15				
	13. Preparation for	the Colloquium / exam throu	gh self-study	30				
	14. Oral exam individual preparation			15				
4. GRADING SYSTEM								
	Elements of evaluation	Bad		Satisfying		Above average		

Nonstandard units have been converted to

basic units with minor errors in

calculation.

Nonstandard units have been converted

to base units without error.

Nonstandard physical units have not

been converted to basic or have been

converted wrong.

4.1. Evaluation of written exam

Physical quantities and

units

of

their

measurement

		_					
	Structure, traceability,	The task is not properly structure			isfactorily structured,	The task is clearly structured, complete,	
	legibility and orderliness	is not traceable, and it is not read			able. The diagrams and	very neat and legible. The diagrams are	
	of the procedure,	Diagrams and sketches are		sketches are mean	ingful, neat with minor	completely accurate, clear and very	
	diagrams and sketches	existent, inaccurate, messy, un	nclear	errors.		neat.	
		and ambiguous.					
	Application of	Uses expressions that do not des		Uses expressions	s that describe the	Uses expressions that describe the	
	appropriate equation	the problem specified, or incor	•	•	on, accurately derives	problem in question, accurately derives	
	(formulas) and the final	expresses the physical unit from			s from the expression,	physical quantities from expressions,	
	result.	expression. Numeric values ar			erical values into the	lists units of measure without errors, the	
		included in the expression. The	e end	expression with	smaller numbers, the	final result is completely accurate.	
		result is incorrect.		final result has sr	naller deviations from		
				the exact result.			
	Knowledge and	It responds by memory, with		-	e basic concepts and	Knowledge is at the level of analysis,	
	expression.	deeper understanding. Does not		without difficu	•	synthesis and evaluation. Observes the	
		or apply basic terms and con-	_	knowledge, understands the material,		principles of physical laws, accurately	
		Does not know how to app	•	explains the terms and concepts supports		and thoroughly explains the content of	
		explain the contents of the course	e with	them with examp	les. Knows the expert	the material, and logically connects and	
4.2. Evaluation of oral exam		examples.		terminology.		explains the terms and concepts and	
						supports them with examples. Finds	
						solutions that were not originally given.	
						It notes correlations with related	
						material. Fluent in professional	
						terminology.	
	Colloquiums/	2		3	4	5	
4.3. Forming the final grade	Written exam	50-64,9%		65-79,9%	80-89,9%	90-100%	
according to the evaluation elements		50-64,9 points	6	5-79,9 points	80-89,9 points	90-100 points	
	The oral part of exem	2		3	4	5	
		50-64,9 points	6	5-79,9 points	80-89,9 points	90-100 points	

	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade			
4.4. Formation of the final grade	90 – 100%	5 (excellent)	A			
based on the absolute	80 – 89,9%	4 (very good)	В			
distribution	65 – 79,9%	3 (good)	С			
	50 – 64,9%	2 (sufficient)	D			
5. ADDITIONAL INFORMATION ABOUT THE COURSE						
		Nı	imber of			

5.1. Compulsory literature	Title	Number of copies in the library	Availability via other media			
(available in the library and via other media)	Olivari L.: Theory of vehicle movement: a collection of tasks and instructions for drawing up a traction calculation, Polytechnic in Šibenik, Šibenik, 2023.	-	On-line (e-learning)			
	Mikulić, D.: Motor vehicles: Theory of movement and construction (III edition), Polytechnic of Velika Gorica, Velika Gorica, 2020 (selected chapters)	5	On-line (e-learning)			
	Lectures and exercises of the course Technical Mechanics.	-	On-line (e-learning)			
	Perše, S., Višnjić, V.: Mechanical engineering in traffic, Faculty of transport and traffic		-			
5.2. Additional literature (at the	sciences, University of Zagreb, Zagreb, 2005. (selected chapters)	5				
moment of changes and/or	Cerovac V.: Technique and safety of road traffic, Faculty of transport and traffic sciences,		-			
amended of study programme)	University of Zagreb, Zagreb, 2001. (selected chapters)	5				
	Vrhovski D., Nikšić M.: Basics of mechanical engineering - a collection of solved tasks, Faculty		-			
	of transport and traffic sciences, University of Zagreb, Zagreb, 2000. (selected chapters)	10				
5.3. Quality assurance methods	The control of students' work quality and the acquisition of necessary knowledge and skills will be	be ensured through in	nteractive work. By keeping track of			
that ensure the acquisition of	attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for					
knowledge, skills and	further guidance to students will be provided in order to increase the efficiency of their work. Stu	idents will be informe	ed about their rights and obligations			
<b>U</b> ,	as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the					
competences	Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.					
5.4. Informing about the course	It is the responsibility of each student to be regularly informed about the course, the coursework, a	and classroom activiti	es. All notices of classes or possible			
and contacting the course	adjournment will be published in a timely manner on the e-learning site of the course and on the	e website of the Šiber	nik University. 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

lecturer

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).

#### Traffic in tourism

1. GENERAL INFORMATION	1. GENERAL INFORMATION ABOUT THE COURSE								
1.1. Course title	TRAFFIC IN TOURISM	201142 / 202110							
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	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 (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st, course materials are on-line, 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	<b>X</b> 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	The goal is to provide students with theoretical knowledge: Define basic transport and tourism terms; Understand synergies between transport and tourism, Apply the learned content of this course in business practice.						
2.2. Terms of course entry and required competences	Four-year secondary education completed, dijalification level 4.7 according to the CKOOF						
	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.						
2.3. Learning outcomes on the	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.						
study programme level	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.						

2.4. Expected learning outcomes	Learning outcomes according to Bloom's taxonomy: (maximum 2 werbs for LO)	Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
on the course level	define and explain the basic concepts in transport and tourism.	1, 2
	2. to analyze and compare the transport sectors in the tourism industry.	4, 2
	3. choose the form of tourist transport as part of a tourism product.	5
	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

	Constructive allignement							
		no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed	
2.5. Course content according to detailed curriculum schedule	25 Canada and an adian to		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	
	91.	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		
		92. 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	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	6 h		

			that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	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.	
93.	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
94.	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 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 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 paper created and presented (using computer programs independently).	6 h
95.	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 knowledge. In the group work on seminar teaching, the	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.	6 h

ı				Instructional model and the discovery	Cambra and and and and and and and and and an	
				brainstorming method and the discussion method on the topic are applied.	Seminar paper created and presented (using computer programs independently).	
	96.	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
	97.	Guest lecture in English: Tourism and Railways (Basic knowledge), Glacier Express - the slowest express Train in the World, the Trans-Siberian Railway (Russian tourism offer).	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 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 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 examples. Seminar paper created and presented (using computer programs independently).	9 h
	98.	The repetition and preparation for the colloquium. Colloquium I.	1, 2, 3, 4, 5	They listen to a lecture and read literature. They prepare individually for the colloquium.	-	12 h
	99.	Field teaching - Airport Zadar/Split	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 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 regular and charter air traffic. Explain the features of low-cost companies. Give examples of low cost airlines. Explain pick-up and departure technology for airport passengers. Give an example of air traffic services to tourists with special requirements.	3 h

100.	Field teaching - Dogus Marine in Šibenik (Mandalina)	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 the written and oral exam they can explain the purpose of marinas and rent a boat. Seminar paper created and presented (using computer programs independently).	5 h
101.	Logistics in tourism	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 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
102.	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
103.	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	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

						_	nod and the discussion			
						method on the topic	1.1			
		104.	Parking destinations	in tourist . Colloquium II.	1, 4, 5	the seminar teach explore the content searching the databat and the literature real that presents the acc group work on	are and read literature. At aing, they individually tof this topic area by use, and on the basis of it ad, create a seminar paper quired knowledge. In the seminar teaching, the nod and the discussion are applied.	At the colloquium or writte knows define basic terms differentiate ways of pa destinations.	of parking and	3 h
		105.	_	considerations. nd preparing for	-	•	They listen to a lecture and prepare individually for the exam.		-	
	3. EVALUATION OF STUDEN	T WOR	K							
	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:from 0 - 24.9% of ECTS credits - they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% - students have the right to take the final exam. 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 preparation of a mental map and case study, preparation and presentation of seminar work and two colloquium); b) during class (active participation in class and preparation of a mental map and case study, preparation and presentation of seminar work) and passing exams (written and oral part of the exam).								who have in the next regular or o ways: a) ase study,	
		Attenda	ance			Written exam	1,5 (without colloquia)	Project		
	3.2. Monitoring student work (enter the share of ECTS credits	Experii work	nental			Research		Practical work		
	for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Essay				Report		Continuous examination		
		Colloqu	uium	1,5 (without wri exam)	tten	Seminar paper	0,5	Other		
		Class a	ctivity	0,5		Oral exam	0,5	Other		

	The student's workload on all bases amounts to 1 ECTS point for 30 hours of	f work per semester and is estimated as:
	Obligation	Hours (estimated)
3.3. Student workload	15. Attending classes	45
	16. Creating and Presenting seminar paper	10
	17. Preparation for the Colloquium / exam through self-study	35
4. FORMATION OF GRADES		

	Element of evaluation	Bad	Satisfying	Above average
	Organization	The paper is not organized in a logical order and lacks structure.	The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion.	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. Evaluation of a 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.	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 referencing references	The sources are not listed at all. The references do not fit the topic and show a cursory approach to 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.

		Bad	Satisfying			Above average
4.2. Grading of the colloguium / written and oral exam	understanding. D terms and concept	memory, without a deeper Does not know or apply basic ots. Does not know how to apply contents of the course with	It reproduces the basic concedifficulty imparts new knowled the material, explains the terms a it supports with examples.	edge, understands	the material, and logically connects and explains	
	Active	70-75% of the presence	76-86% of the presence	87-100% of th	ne presence	Case studies resolved
	attendance	2 points	4 points	7 poir	nts	10 points
	Seminar paper	2	3	4		5
4.3. Forming the final grade	Seminar paper	5 points	7 points	8 poir	nts	10 points
according to the evaluation	Examination /	2	3	4		5
elements	Written	50-64,9%	65-79,9%	80-89,	,9%	90-100%
	examination	25 points	30 points	35 poi	ints	40 points
	Oral part of the	2	3	4		5
	exam	25 points	30 points	35 poi	ints	40 points
		of adopted knowledge, skills and ences (teaching + final exam)	Numerous grade			ECTS grade
4.4. Formation of final grade		90 – 100%	5 (excellent)			A
based on absolute distribution		80 – 89,9%	4 (very good)			В
		65 – 79,9%	3 (good)			С
		50 – 64,9%	2 (sufficient)			D

5. ADDITIONAL INFORMATION ABOUT THE COURSE								
5.1. Required literature	Title	Number of copies in the library	Availability via other media					
(available in the library and through other media)	Mrnjavac E.: Traffic in tourism, Faculty of tourism and hotel management, University of Rijeka, Opatija, 2006. (selected chapters)	5						
	Maršanić R.: Parking in tourist destination, 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)	Baričević H.: Traffic in tourism, Collegue of tourism, Šibenik, 2003. Lumsdon L. M., Page S. J.: Tourism and Transport, Issues and Agenda for the New Millennium, Routledge, 2003.	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 ensured through interactive work. Keeping 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.							
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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).							

## Freight-distributional centres and terminals

1. GENERAL INFORMATION ABOUT THE COURSE						
1.1. Course title	FREIGHT-DISTRIBUTIONAL CENTRES AND TERMINALS	1.8. Course code at ISVU	140777 / 202101			
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	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+30+0)			
1.4. Study programme (professional undergraduate, and professional 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> - 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	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	
2.1. Course objectives	The goal is to provide students with theoretical knowledge: Define basic goods-distribution terms; Understand the division, structure and function of goods-distribution centers and terminals; Understand the technical and technological characteristics of goods-distribution centers and terminals and the design and planning of management systems; Apply the learned content of this course in business practice.
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 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.							
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.							
2.4. Expected learning outcomes	Learning outcomes according to Bloom's taxonomy: (maximum 2 werbs for LO)	Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.						
on the course level	1. define and explain basic concepts in the field of distribution and trade in goods.	1, 2						
	2. comment on the fundamental characteristics of the goods centers and terminals in the transport system.	4						
	3. integrate and critically evaluate technological processes in goods distribution centers and terminals.	3, 5						
	4. to choose transshipment facilities at terminals according to the type of goods and technological procedures.	3						
	<ol> <li>distinguish between types of storage and technological storage procedures.</li> </ol>	2						
	6. present the acquired knowledge independently and in a team.	6						

	Constr	ructive allignement				
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
2.5. Course content according to detailed curriculum schedule	106.	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. at the seminar teaching, they are introduced to the methodology of writing seminar papers. They choose the topic of the seminar papers and the brainstorming method and the method of discussing the selected topic are applied.	_	2 h

	Goods transport centers and types of goods transport centers	1, 2,	They listen to a lecture and read literature.	At the colloquium or the written and oral exam define the basic goods-distribution terms. They describe the role and difference of goods-distribution centers, warehouses and goods-transport centers and know how to list and explain logistic activities of goods-transport centers.	2 h
107.	Field teaching VELPRO Šibenik.	2, 3	They listen to a lecture. (Touring the goods distribution center. Getting acquainted with the technology of receiving and distributing goods, ways of storing and storing goods, and commissioning goods for distribution. The method of experiential learning and self-discovery is applied. At seminar classes, they make seminar papers individually or in pairs and discuss the given topic.	At the colloquium or the written and oral exam they can explain the role of goods distribution.	2 h
108.	Terminals and terminal types	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. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching.	At the colloquium or the written and oral exam they define the basic terms of the terminal. They know how to list and distinguish types of terminals.	4 h
109.	Port Terminals.  Multifunctional and universal terminals.	1, 2, 3	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. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching.	At the colloquium or the written and oral exam they know how to define and enumerate port terminals. Describe the role and characteristics of multipurpose and universal terminals. Seminar paper created and presented (using computer programs independently).	4 h

	110.	Container terminals.	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 reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. 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 what containerization and container is, and list the advantages and disadvantages of containerization. Enumerate and describe container types. Describe container port terminals, their technological processes, types of warehouses and list loading and unloading devices. At the colloquium or written and oral exam knows enumerate the types of container ships at the colloquium or the written and oral exam. Define and describe landbased container terminals. Explain Huckepack technologies and list loading and unloading devices. Describe storage types. Seminar paper created and presented (using computer programs independently).	10 h
1	111.	Ro-Ro terminals.	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 reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. 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 and describe Ro-Ro terminals, explained by technological processes of work on them, enumerate and describe the loading and unloading devices and describe storage. List the advantages and disadvantages of Ro-Ro technology.	7 h
1	112.	LUF terminals. LASH terminals.	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 reading the	At the colloquium or written and oral exam knows define and describe LUF and LASH terminals explain the technological processes of work on	7 h

			literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	them, enumerate and describe the loading and unloading devices and describe storage. List the advantages of the LUF system and the advantages and disadvantages of the LASH system. List the types of LASH ships and describe the technology of loading / unloading barges on ships.  Seminar paper created and presented	
113.	Repetition and preparation for the colloquium. Colloquium I.	1, 2, 3, 4, 5	They listen to lectures and read literature and individually prepare for the colloquium.	(using computer programs independently).	25 h
114.	Terminals for the transhipment of dry and bulk cargo.	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 reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. 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 know how to define and describe ways of transshipment in ports and terminals. Describe the coal and iron ore transhipment terminal and the phosphate transhipment terminal and explain their technological processes. Enumerate loading and unloading devices and explain storage of coal and iron ore and phosphate. At the colloquium or the written and oral exam they can define and describe cereals and cement transshipment terminals. Explain their technological processes of work and the list of loading unloading devices. Explain storage of cereals and cement. Seminar paper created and presented (using computer programs independently).	10 h

	1			They listen to a lecture. (Visiting Split RO-RO,		
	115.	Field teaching Port of Split and LDC KONZUM in Dugopolje.	2, 3, 4, 5	container and truck terminals, coastal and refrigeration warehouses, bulk cargo terminals, timber terminals, iron terminals. Getting acquainted with technological processes at terminals, warehousing and warehousing of goods and transhipment machinery. the Konzum distribution center monitoring the process of storing and storing different types of goods in the rack warehouse and cold store and preparing and controlling the goods before distribution. Types of forklifts. The experiential and self-discovery methods are applied.	At the colloquium or written and oral examination know to describe and explain the technological processes of work on terminals, state of loading unloading devices and explain storage.	4 h
	116.	Terminals for the transhipment of oil and petroleum products.  Terminals for transhipment of liquefied gases.	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 reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. 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 know how to define and describe the terminals for transhipment of oil and petroleum products and terminals for transhipment of liquefied gases. Explain their technological processes of work and the list of loading unloading devices. List the types of storage and explain storage. Enumerate and describe systems with buoys for cargo handling. Seminar paper created and presented (using computer programs independently).	8 h
	117.	Dangerous goods terminals. Terminals for the transhipment of heavy and very heavy loads. The terminals for the transhipment of wood and wood products.	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 reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group	At the colloquium or written and oral exam knows define and enumerate dangerous cargoes. List the systems by which the classification of the transport of dangerous goods is carried out. Describe the technological process of handling hazardous	8 h

			_			
				work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	materials. Give an example for very heavy loads. List and describe methods for loading heavy loads on board. Enumerate loading / unloading devices and explain storage of heavy loads. Describe the technological process of work on the terminal for wood and wood products. Enumerate the loading and unloading devices and describe storage at the terminal for wood. Seminar paper created and presented (using computer programs	
	118.	Terminals for animal transshipment. Terminals for the transshipment of southern fruit and food products.	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 reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	independently).  At the colloquium or the written and oral exam, they are able to list the factors on which the transport, transhipment and storage of perishable products depends. List the groups of frozen foods and give an example. Explain the technological process of working at a food product terminal. List the infrastructure and superstructure that the animal terminal must have at its disposal. Describe the technological process of work and the list of loading unloading devices for animals.	6 h
	119.	Repetition and preparation for the colloquium. Colloquium II.	1, 2, 3, 4, 5	They listen to lectures and read literature and individually prepare for the colloquium.	-	25 h
	120.	Concluding considerations. Repeating and preparing for the exam.	-	They listen to a lecture and prepare individually for the exam.	-	26 h

3. EVALUATION OF STUDENT WORK										
3.1. Students` obligations	In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 7 Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students have achieved during the course: from 0 - 24.9% of ECTS credits - they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in next academic year; from 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in reg or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam in the course in two way during the course of teaching through continuous monitoring of students (active participation in classes and development and presentation of seminar work) and passing exams (written exam).									
	Attendance		Written exam	3 (without colloquia)	Project					
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research		Practical wo	ork				
for each activity so that the total number of ECTS points	Essay		Report		Continuous examination	1				
corresponds to the credit score of the course)	Colloquium	3 (without written exam)	Seminar paper	0,5	Other					
	Class activity	0,5	Oral exam	1 (without colloquia)	Other					
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:									
		Obliga	tion		Hours (estimated)					
3.3. Student workload	18. Attending	g classes			60					
5.5. Student Workload	19. Creating	and Presenting seminar	paper		20					
	20. Preparation	on for the Colloquium /	exam through self-study			70				
4. GRADING SYSTEM										
4.1. Evaluation of a of seminar work	Element of evalua	ation	Bad	Satisfying	Satisfying Above average					

				The paper is	well structured	with a Th	ne paper is well structured with a clear	
	Organization	The paper is not organiorder and lacks structure	-	clear distinction between the introduction, the main body of the text		the dis	stinction between the introduction, the ain body of the text and the conclusion,	
				and the conclus	sion.		nich are logically interconnected.	
	Terminology, writing style	Words and expressions official terminology. T is not appropriate, the s long, of a modest voca frequent and repeate errors.	he writing style entences are too bulary and with	Words and expressions are in line official terminology. The writing is appropriate, the sentence structuclear, the vocabulary is appropriate there are few grammatical errors.		off g style cture is ate and off unc wr are	ords and expressions are aligned with ficial terminology and show an derstanding of their meaning. The riting style is excellent, the sentences e clear and concise, the vocabulary is the and there are no grammatical errors.	
	Citing and referencing references	The sources are not listed at all. The references do not fit the topic and show a cursory approach to 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.		es are are	d consistently listed. The references e appropriate, their list is "rich" and mprehensive and shows a detailed search approach.	
	Ва	ıd	Satisfying				Above average	
4.2. Grading of the colloguium / written and oral exam	It responds by memoral understanding. Does not terms and concepts. Does or explain the content examples.	t know or apply basic s not know how to apply	difficulty impar	the basic concepts new knowled plains the terms a examples.	ge, understands	and evaluaccurately of the ma explains the with example.	e is at the level of analysis, synthesis uation. It observes the legality, and thoroughly explains the content aterial, and logically connects and he terms and concepts that it supports apples. Finds solutions that were not given. It notes correlations with terial.	
	Active 70	-75% of the presence	76-86% of	the presence	87-100% of t	he presence	Case studies resolved	
	attendance	2 points	4 pc	oints	7 po	ints	10 points	
4.3. Forming the final grade according to the evaluation	Seminar paper	2		3	4		5	
elements	Seminar paper	5 points	7 pc	oints	8 po	ints	10 points	
	Examination / Written	2		3	4		5	
	examination	50-64,9%	65-7	9,9%	80-89,9%		90-100%	

		Oral part of the exam 25 points 2 25 points		30 points		35 points 4		40 points	
	Oral part of the							5	
	exam			30 points 35 poi		35 points		40 points	
		of acquired knowledge, skills an tences (teaching + final exam)	d	Numerous grade			ECTS grade		
447	90 – 100%			5 (excellent)		A			
4.4. Formation of final grade based on absolute distribution	80 – 89,9% 65 – 79,9%			4 (very good)		В			
				3 (good)			С		
		50 – 64,9%			2 (sufficient)		D		
5. ADDITIONAL INFORMATION ABOUT THE COURSE									
5.1 Populared literature Number of copies Availability							Availability via other		

5.1. Required literature (available in the library and	Title	Number of copies in the library	Availability via other media
through other media)	Poljičak, AM., Ljubić Hinić, M.: Freight Terminals - Authorized script, Polytechnic of Šibenik, Šibenik,		Available online
un ough outer mouth,	2016.		
	Dundović, Č.: Freight terminals, Faculty of Maritime Studies, University of Rijeka, Rijeka, 2002.		
5.2. Supplementary literature (at	Mlinarić T. J.: Freight-distributional centres, Faculty of transport and traffic sciences, University of	3	
the time of the submission of	Zagreb, Zagreb, 2013.		Available online
changes and / or additions to the	Dundović, Č., Kesić, B.: Technology and organization of ports, Faculty of Maritime Studies, University	2	Avanable omine
study program)	of Rijeka, Rijeka, 2001.	3	
	Kirinčić, J.: Ports and terminals, School book, Zagreb, 1991.		
5.3. Quality assurance methods	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured	through interactive wo	ork. Keeping records of
that ensure the acquisition of	students' attendance and activity in the classroom and information obtained about student progress throu	igh the midterm will p	provide the information

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 ensured through interactive work. Keeping 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.

# 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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).

## **Transshipment resources**

1. GENERAL INFORMATION	. GENERAL INFORMATION ABOUT THE COURSE									
1.1. Course title	TRANSSHIPMENT RESOURCES	1.8. Course code at ISVU	214571 / 214572							
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	1.9. Course code at MOZVAG	<u>-</u>							
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(45 + 15 + 15 + 0)							
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd 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	2 <sup>nd</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 DESCRIPTION	
2.1. Course objectives	The goal is to provide students with theoretical knowledge: Distinguish between types of transshipment resources; Understand the principle of continuous operation of transhipment machinery and set an example for application in business practice; Calculate the efficiency of uninterrupted handling equipment; Learn how to choose uninterrupted handling equipment based on the type of goods. Describe and distinguish between basic features and performance of transshipment mechanization with periodically action; Understand the application and purpose of transshipment mechanization with periodically action; Apply the learned content of this course in business practice.
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 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.								
	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.								
		Level of LO:							
		1- remembering,							
		2- understanding,							
	Learning outcomes according to Bloom's taxonomy:	3- application,							
		4- analysis,							
		5- evaluation,							
		6- synthesis							
	1. state the division of goods according to the technical suitability for transport and transhipment and list the physical and	1							
2.4. Expected learning outcomes	technical characteristics of the goods,	•							
on the course level	2. to sketch and comment on continuous operation transhipments,	3, 4							
	<ol> <li>calculate the productivity of individual continuous-action transhipment means,</li> </ol>	4							
	4. recommend loading and unloading means depending on the type of goods and productivity,	5							
	5. sketch and select the required elements of the crane,	4, 5							
	6. distinguish and propose types of cranes with regard to the scope,	2, 6							
	7. calculate the productivity of transshipment mechanization with periodically action,	3							
	8. define and calculate the number of pallets and containers required.	1, 3							
		•							

		Constructive allignement							
2.5	25 Course content according to	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed		
	2.5. Course content according to detailed curriculum schedule	121.	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		

	1	Г		T	1
	Basics of transverse mechanization.	1	They listen to lectures and read literature. At the seminar classes, they get acquainted with the methodology of writing seminar papers. They choose the topics of seminar papers. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. During the exercises classes they repeat the units of measurement and formulas needed to calculate the productivity of transhipment machinery.	At the colloquium or written and oral exam, they state the types of transhipment according to the degree of mechanization and automation. They state the division of goods according to the technical convenience for transport and transhipment and state the physical and technical characteristics of the goods. They define and sketch the embankment angle. They list the types of productivity of transhipment machinery with continuous operation.	6 h
122.	Belt conveyors. Band conveyor belts.	2, 3, 4	They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can list the features and sketch the belt conveyor and explain its constituent elements. Give an example of application. List and explain the types of conveyor belts. State and sketch the shapes of the bearing surfaces of the conveyor belts of the belt conveyor. They know how to calculate the productivity of belt conveyors.	10 h
123.	Drums and rollers of belt conveyors. Devices for loading and unloading. Calculation of belt conveyors.	2, 3, 4	They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes, they	At the colloquium or written and oral exam, they can enumerate and explain the role of drums. Sketch the belt conveyor drive with one, two and three drive drums. List and sketch the types of rollers according to construction solutions and shape. They can state, sketch and explain the role of loading and unloading devices. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the required belt width for a belt	10 h

			calculate the productivity of the conveyor	conveyor. They know how to calculate the	
			by analytical methods.	productivity of belt conveyors.	
124.	Screw conveyors. Scope, shapes and calculation of a screw conveyor.	2, 3, 4	They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can explain the role of screw conveyors and state its advantages and disadvantages. Give an example of application. They can enumerate and sketch the shapes of the conveyor auger and indicate the type of material they are used for. Sketch and explain the working principle of a screw conveyor for piece goods. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the productivity of belt conveyors.	8 h
125.	Elevators. Forms of construction and calculation. Pneumatic conveyors. Forms of construction and calculation.	2, 3, 4	They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they know how to define elevators and list and explain the types of elevators. Sketch and explain the principle of operation of the elevator. List the types of buckets and the elements for the transfer of piece goods. At the colloquium or written and oral exam, they can state the types of pneumatic conveyors, sketch and explain their working principle. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the productivity of screw conveyors.	8 h
126.	Sectional conveyors. Features and calculation of sectional conveyors. Vibrating conveyors. Scope, forms and calculation.	2, 3, 4	They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the	At the colloquium or written and oral exam, they can state the characteristics of sectional conveyors and sketch and explain their working principle. At the colloquium or written and oral exam, they can state the characteristics of vibrating conveyors, explain their working principle and sketch	8 h

	,			•	1
			brainstorming method and the method of	them. Prepared and presented seminar paper	
			discussion on the presented topic are	(independent use of computer programs).	
			applied. In the exercises classes, they	They know how to calculate the productivity	
			calculate the productivity of the conveyor	of elevators.	
			by analytical methods.		
			They listen to lectures and read literature. In seminar classes, they individually research	At the colloquium or written and oral exam, they know how to define gravity conveyors,	
			the content of this thematic area by	explain the principle of work and state their	
			searching the database, and on the basis of	advantages and disadvantages. Explain the	
			it and the read literature, they prepare a seminar paper which presents the acquired	principle of operation of a flat gravity slide and sketch it. Explain the principle of	
	Gravity conveyors. Scope,		knowledge. In the seminar classes, the	operation of a spiral gravity slide, list the	
	shapes and calculation of		brainstorming method and the method of	designs and sketch them. List the types of	
127.	gravity conveyors.	1, 2, 3, 4	discussion on the presented topic are	gravity rollers and explain their working	8 h
	Conveyors scrapers. Scope,	, , - ,	applied. In the exercises classes, they	principle. Give an example of application.	
	forms and calculation of		calculate the productivity of the conveyor	They can explain the principle of operation	
	scraper conveyors.		by analytical methods.	and sketch the scraper conveyor. Give an	
			by unarytical methods.	example of application. Explain what redlers	
				are. Prepared and presented seminar paper	
				(independent use of computer programs).	
				They know how to calculate the productivity	
				of pneumatic conveyors.	
	Repetition and preparation		They listen to lectures and read literature	of pheumatic conveyors.	
128.	for the colloquium.	1 2 3 4	1		25 h
128.	Colloquium I.	1, 2, 3, 4	and individually prepare for the colloquium.	<del>-</del>	43 II
	Conoquium I.		They listen to lectures and read literature. In		
			the seminar classes, they individually	At the colloquium or written and oral exam,	
			research databases and, based on that, read	they can state and explain the classes of the	
			the literature and prepare a seminar paper	crane and calculate the theoretical and	
129.	Crane operating class.	5, 6, 7	which presents the acquired knowledge.	operational productivity. List, distinguish and	8 h
127.	Crane elements.	3, 0, 7	The brainstorming method and the	sketch crane elements and identify the crane	оп
			discussion method are applied in the	class. Prepared and presented seminar paper	
			seminar classes. In the exercises classes,		
			1	(independent use of computer programs).	
			they get acquainted with the calculation of		

	1			T	
			the productivity of transhipment machinery		
			with occasional operation and calculate the		
			productivity with an analytical method.		
130.	Ropes and steel ropes. Hooks.Chain. Grippers.	5,7	They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read the literature and prepare a seminar paper which presents the acquired knowledge. The brainstorming method and the discussion method are applied in the seminar classes. In the exercises classes, they determine the classes of cranes by the analytical method.	At the colloquium or written and oral exam, they know how to list and describe the types of ropes and choose the necessary rope. List and explain ways of fixing steel ropes. List, describe and sketch the types of hooks, perform the calculation of the dangerous cross section of the hook. List, explain, sketch the types of chains and give an example from practice. They can list, describe and sketch the types of catchers and give an example from practice. Calculate the parameters for classifying cranes into classes and, based on the parameters, classify the cranes into a specific class.	8 h
131.	Pulleys. Brakes.	5, 7	They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read the literature and prepare a seminar paper which presents the acquired knowledge. The brainstorming method and the discussion method are applied in the seminar classes. In the exercises classes, they solve numerical problems for manipulative vehicles using the analytical method In the exercises classes, they solve numerical problems with the analytical method, which determine the parameters for classifying cranes into classes.	At the colloquium or written and oral exam, they can explain the task of the pulley, list the types of pulley, sketch the performance of the pulley in practice. They know how to explain the task of brakes, list the types and give an example from practice. Sketch and explain the brakes with two and one pedal. They can sketch and explain conical, belt and lamellar brakes. Calculate the parameters for classifying cranes into classes and, based on the parameters, classify the cranes into a specific class.	10 h
132.	Division of the crane. Design of small cranes.	5, 6, 7, 8	They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read	At the colloquium or written and oral exam, they can list small and large cranes. Sketch and explain small cranes and give an example	10 h

		<del>,</del>				
				the literature and prepare a seminar paper	from practice. Calculate the required pressure	
				which presents the acquired knowledge.	in the hydraulic jack cylinder, the required	
				The brainstorming method and the	force at the end of the drive lever and the	
				discussion method are applied in the	piston diameter.	
				seminar classes. In the exercises classes,		
				they solve numerical problems for a		
				hydraulic crane using the analytical		
				method.		
				They listen to lectures and read literature. In		
				the seminar classes, they individually		
				research databases and, based on that, read	At the colloquium or written and oral exam	
				the literature and prepare a seminar paper	they know how to group large cranes. Sketch	
	133.	Large cranes.	5, 6, 7, 8	which presents the acquired knowledge.	and explain large cranes. Explain the	12 h
	133.	Large cranes.	3, 0, 7, 0	The brainstorming method and the	difference between boundaries and cranes.	1211
				discussion method are applied in the	Give an example from practice. Calculate the	
				seminar classes. In the exercises classes,	required number of containers.	
				they solve numerical problems with the use		
				of containers using the analytical method.		
				They listen to lectures and read literature. In	At the colloquium or written and oral exam,	
				the seminar classes, they individually	they know how to list and define universal	
				research databases and, based on that, read	manipulative vehicles. State the division of	
		Universal manipulative vehicles. Forklifts, loaders		the literature and prepare a seminar paper	the forklift and give an example from	
				which presents the acquired knowledge.	practice. Explain loaders, list and describe	
	134.	and small towing vehicles.	8	The brainstorming method and the	small towing vehicles and give an example	8 h
		Pallets and containers.		discussion method are applied in the	from practice. At the colloquium or written	
		Tanta and containers.		seminar classes.	and oral exam, they know how to define and	
				In the exercises classes, they solve	list the types of pallets and containers and	
				numerical problems with the use of	give an example from practice. Calculate the	
				containers using the analytical method.	control number of the container.	
		Repetition and preparation		They listen to the lecture and read the		
1:		for the colloquium.		literature and individually prepare for the		
	135.	Colloquium II. Concluding	5, 6, 7, 8	colloquium/ exam.	-	40 h
		considerations. Repeating		1		
		and preparing for the exam.				

3. EVALUATION OF STUDEN	T WORK								
3.1. Students` obligations	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: from 0 - 24.9% of ECTS credits - they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can pass the final exam in the course in two ways: a) during classes through continuous monitoring of students (active participation in classes and preparation and presentation of seminar paper and two colloquia); b) during classes (active participation in classes and preparation of seminar paper) and taking exams (written and oral part of the exam).								
	Attendance		Written exam	4 (without colloquia)	Project				
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research		Practical work				
for each activity so that the total number of ECTS points	Essay		Report		Continuous examination				
corresponds to the credit score of the course)	Colloquium	4 (without written exam)  Seminar paper 0,5		0,5	Other				
	Class activity	0,5	Oral exam	1(without colloquia)	Other				
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:								
		Obliga	tion		Hours (estimated)				
3.3. Student workload	21. Attendin	g classes			75				
	22. Creating	and Presenting seminar p	paper		10				
	23. Preparati	on for the Colloquium / e	exam through self-study		95				
4. GRADING SYSTEM						,			

Satisfying

The paper is well structured with a clear

distinction between the introduction,

the main body of the text and the

conclusion.

Above average

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.

Bad

The paper is not organized in a logical

order and lacks structure.

**Element of evaluation** 

Organization

4.1. Grading of seminar work

	Terminology, wri	official terminology. T is not appropriate, the s long, of a modest voca	frequent and repeated grammatical		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 grammetical errors.		ords and expressions are aligned with cicial terminology and show an derstanding of their meaning. The iting style is excellent, the sentences e clear and concise, the vocabulary is h and there are no grammatical errors.	
	Citing and reference references	The sources are not li references do not fit the a cursory approach to topic.	topic and show	and with error	ources are listed but incomplete ith errors. The references are at to the topic and show a ctory 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.	
		Bad		Satisfying			Above average	
4.2. Grading of the colloguium / written and oral exam	understanding. Doe terms and concepts.	nemory, without a deeper es not know or apply basic Does not know how to apply ntents of the course with	difficulty impa the material, ex	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		and evaluaccurately the materia the terms 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	70-75% of the presence	76-86% of the presence 87-1		87-100% of th	ne presence	Case studies resolved	
	attendance	2 points	4 po	ints	7 poi	nts	10 points	
	Caminan nanan	2	3		4		5	
4.3. Forming the final grade	Seminar paper	5 points	7 points		8 poi	nts	10 points	
according to the evaluation	Examination /	2	3	}	4		5	
elements	Written	50-64,9%	65-79	9,9%	80-89,	9%	90-100%	
	examination	25 points	30 pc	oints	35 poi	ints	40 points	
	Oral part of the	2	3	3	4		5	
	exam	25 points	30 pc	oints	35 points		40 points	

	Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
4.4 Formation of final grade	90 – 100%	5 (excellent)	A
4.4. Formation of final grade based on absolute distribution	80 – 89,9%	4 (very good)	В
	65 – 79,9%	3 (good)	С
	50 – 64,9%	2 (sufficient)	D

#### 5. ADDITIONAL INFORMATION ABOUT THE COURSE

employer survey and Alumni Association.

knowledge, skills and

competences

	Title	Number of copies in the library	Availability via other media
5.1. Required literature	Mavrin I.: Conveyors, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 1999. Šćap D.: Transmissions and elevators, Faculty of Mechanical and Naval Engineering, University of	0	Available online
(available in the library and through other media)	Zagreb, Zagreb, 2004. (selected chapters) Bognolo, D., Kršulja, M.: Transhipment means - Collection of solved tasks, Polytechnic of Rijeka,	0	
	Rijeka 2017. (selected chapters) Boris Ribarić: Examples of solved tasks in the subject of handling machinery, Faculty of transport and	3	
	traffic sciences, University of Zagreb, Zagreb 1994 (selected chapters)	0	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Serdar J.: Transmissions and elevators, Lexicographic Institute "M. Krleža", Zagreb, 1995.	5	
5.3. Quality assurance methods that ensure the acquisition of	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured threatendance and activity in the classroom and information obtained about student progress through the further guidance to students in order to increase their work efficiency. Students will be instructed in their	midterm will provide th	e 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,

# 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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).

## Traffic and ecology

1. GENERAL INFORMATION	1. GENERAL INFORMATION ABOUT THE COURSE								
1.1. Coures title	TRAFFIC AND ECOLOGY	1.8. ISVU course code	201135 / 202080						
1.2. Coures lecturer	MSc Tanja Radić Lakoš, senior lecturer	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)						
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd 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	□ yes <b>X</b> no						
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% □ More than 20 % □						

2. COURSE DESCRIPTION						
2.1. Course objectives	The aim is that student, based on theoretical knowledge and case studies, be able to: Define basic ecological and environmental concepts; Understa problems in their own environment (in traffic and / or in the work environment) to independently manage the environment in a way that minimally affect the state and components of the environment in terms of sustainable development; Learn to identify the damage that traffic or traffic system participar can cause to natural ecosystems; Apply the learned content of this course in business practice.					
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 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.					
	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.							
		LO Level:						
		1- Recapture,						
	Tanaming automos towards Diagrams towards	2- Understanding,						
	Learning outcomes towards Bloom's taxonomy:	3- Application,						
	(up to two verbs per LO)	4- Analysis,						
		5- Evaluation,						
		6- Synthesis						
24.5	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						
2.4. Expected learning 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).	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						

	Cons	Constructive alignment							
2.5. Course content according to	No	Thematic ensemble / Lecture	LO of the	Content / Teaching Method	Evaluation	Time			
detailed curriculum schedule	110	Topic	Course	Content / Teaching Method	D'undurion	needed			
detailed culticulum schedule		Introduction to the course and a detailed performance plan	-	Listen to the lecture. On seminary					
	136.			teaching, by independent work on the	-	2 h			
				computer students get acquainted with					

		T	1			
				course content and documents on the e-		
				learning course page.		
		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
	137.	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
	138.	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 distinguish organisms with regard to the trophy.	4 h
	139.	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	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	10 h

			presenting adopted knowledge and ideas,	of the environment. Created mental	
			discuss issues.		
			discuss issues.	map. Solved case study.	
140.	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 colloquy 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
141.	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
142.	View of mitigation and / or rehabilitation measures. The role of catalyser and $\lambda$ -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	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	10 h

				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.	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	
	143.	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 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 types of fossil fuels and RES and choose and comment on the most environmentally acceptable solution. Created and Presented seminar paper (by independent use of computer programs).	4 h
	144.	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

	145.	Pollution and degradation of water in road traffic. View of mitigation and / or rehabilitation	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	8 h	
		measures.		the case study.	dynamics of water pollution along roads and to propose mitigation and / or rehabilitation measures. Solved case study.	/ or	
	146.	Pollution and degradation of the 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.	In a colloquy or written and oral exam they can define and describe the underlying concepts of pollution and degradation of the sea, enumerate and differentiate the natural and anthropogenic sources of pollution of the sea, predict the dynamics of seawater pollution and propose mitigation and / or rehabilitation measures. Solved case study	8 h	
	147.	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.	In a colloquy or written and oral exam students can define and describe the underlying concepts of 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 environment and give an example of how to take care of it. Created and Presented seminar paper (by	1 h	

		l		T	
				independent use of computer	
				programs).	
148.	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	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	6 h
			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.	out of the vehicle. Created and Presented seminar paper (by independent use of computer programs).	
149.	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
150.	Concluding Considerations / Repeating and Preparing for Exam.		Listen to the lecture and individual preparation for the exam.	-	20 h

#### 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: from 0 - 24.9% ECTS credits- is rated unsuccessful and cannot get ECTS credits and must re-enrol the subject in the next academic year; from 25 - 49.9% ECTS credits - is rated inadequate and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; more than 50% ECTS credits - students have the right to access the final exam of the subject. Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the lessons, creating mental map, solving

		studies, making and presenting the seminar paper and passing two colloquia); b) during the course (active participation in the lessons, creating mental solving case studies, creating and presenting the seminar paper) and passing the exam (written and oral exam).								
	map, solving case studies	s, creating and presenting	g the seminar pape	er) and pa		and oral	exam).			
	Attendance	Written exam			2 (by submitting both colloquiums the student is relieved of an written examination)	Project				
3.2. Monitoring student work	Experimental work		Research			Practica	al work			
	Essay		Report			Continu	ious examination			
number of ECTS points corresponds to the credit score of the course)	Colloquium co	colloquiums the student is relieved of a written and oral	Seminar paper		0,5	Other (i	inscribe)			
(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)  Essay  Essay  Report  Colloquium  Seminar paper  0,5  Class activities  Oral exam  To both colloquium student is reliable to the course of the	1 (by submitting both colloquiums the student is relieved of an oral examination)	Other (i	inscribe)							
	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:									
		Hours (estimate)								
3.3. Student workload	24. Attending class	ses			45					
	25. Creating and P	resenting seminar paper	:				10			
	26. Preparation for	r the Colloquium / exam	through self-study	y			65			
4. GRADING SYSTEM								,		
	Valuation Element	Poor	r		Satisfying		Abov	re average		
4.1. Seminar paper grading	Organization	The paper is not orga	-	clear introdu	aper is well structured distinction between action, the main part of the conclusion.	n the	distinction between	estructured with a clear on the introduction, the ext and the conclusions		

						that are another	perfectly logically linked to one	
	Terminology, writin	Words and phrases are harmonized with official termino Writing style is not approp sentences are too long, more vocabulary, and frequent and representational mistakes.		oriate, is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.		official official understate writing clear an and their	and phrases are aligned with terminology and show an anding of their meaning. The style is excellent, the sentences are ad concise, the vocabulary is rich the are no grammatical errors.	
	Quoting ar referencing	Sources are not speci references do not mate show a superficial a research topic.	ch the topic and	Sources are listed, but incomplete and with errors. The references are compappropriate for the subject and show a three states of the subject and show a state			Sources are accurate, complete and consistent. The references are appropriate, their list is "rich" and comprehensive and shows a robust research approach.	
4.2. Colloquium / exam grading	Give answer by understanding. Does	memory, no deeper not know and does not as and concepts. Cannot ontents of the course.	transfers new k	Satisfying sic terms, without nowledge, understand the terms and the examples.	ands subject	evaluation. It ob thoroughly expla logically links ar that it encapsula	Above average the level of analysis, synthesis and serves legitimacy, accurately and hins the content of the subject, and ad explains the terms and concepts lates. Find solutions that are not at. There is a correlation with cts.	
	Active participation in the	70-75% of attendance	76-86%	of attendance	87-100%	of attendance	Created mental map. Solved case study.	
	lessons	2 points	4	points	7	points	3 points	
4.3. Creating a final grade	Saminan nanan	2		3		4	5	
according to evaluation elements	Seminar paper —	5 points	7	points	8	points	10 points	
elements		2		3		4	5	
	Colloquium / written exam	50-64,9%	65	5-79,9%	80-89,9%		90-100%	
		25 points	30	) points	35	points	40 points	

	Oral exam	2		3	5		5	
	Orar exam	25 points		30 points	35 points		40 points	
	Percentage of adopted knowledge, skills and competences (teaching + final exam)			Numerous	grade	ECTS grade		
	90 – 100%			5 (excell	ent)	Α		
4.4. Creating a final grade according to absolute allocation		80 – 89,9%			ood)	В		
		65 – 79,9%			d)		С	
		50 – 64,9%		2 (sufficient)			D	

### 5. ADDITIONAL INFORMATION ABOUT THE COURSE

	Title	Number of copies in the library	Availability via other media
5.1. Compulsory literature (available in the library and through other media)	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) 144 final, 2011.  Golubić, J.: Traffic and environment, Faculty of transport and traffic sciences, University of Zagreb,	5	Available On-line
	Zagreb, 1999. Radić Lakoš, T. Environmental management in Tourism, Polytechnic in Šibenik, Šibenik, 2022. (selected chapters)		Available On-line
5.2. Additional literature (at the	Radić Lakoš, T.: Environmental management, Polytechnic of Šibenik, Šibenik, 2018. (selected chapters)		Available On-line
moment of changes and/or	Glavač, V.: Introduction to global ecology, Croatia University Edition, Zagreb, 2001.	5	
amended of study programme)	Udovičić, B.: Human and environmental, Kigen, Zagreb, 2009.	2	
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 ensure attendance and student activity during classes and provided information on students' progress through sh further guidance to students will be provided in order to increase the efficiency of their work. Students will as well as the methods of work and the required literature. Indicators of quality assurance system: Stud Croatian employment service on the annual state of student employment, surveys from employers and Alicenter of the students will be ensured attendance and students will be ensured attendance and students progress through should be ensured attendance and students will be ensured attendance and students are provided information on students' progress through should be ensured attendance and students will be ensured attendance and students' progress through should be ensured attendance and students will be ensured attendance and students are provided information on students' progress through should be provided in order to increase the efficiency of their work. Students will be provided in order to increase the efficiency of their work. Students will be provided in order to increase the efficiency of their work. Students will be provided in order to increase the efficiency of their work.	ort colloquiums and hom Il be informed about thei ent survey, monitoring o	ework, information for rights and obligations

5.4. information on the course and contact with the teacher

It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any delay in teaching will be published on the e-learning pages of the course and on the web pages of the Šibenik University. Students can contact the teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It 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).

## Traffic corridors and merchandise flows

1. GENERAL INFORMATION	ABOUT THE COURSE		
1.1. Course title	TRAFFIC CORRIDORS AND MERCHANDISE FLOWS	1.8. Course code in ISVU	140771 / 202099
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	PhD Luka Vukić, assistant college professor	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30+0+30+0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd 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	2 <sup>nd</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% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives		ge and case studies: become familiar with the creation and de World and Croatia, distinguish the main transport corridors	
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification lev	el 4.2 according to the CROQF.	
2.3. Learning outcomes on the study programme level	LO1: To apply and link professional terms from technology in Croatian and English.	and organization of road traffic in written and oral communication	cation with the professional public
	LO2: To organize and implement team work, and critically	judge the opinions and attitudes of team members.	
	LO3: To individually and responsibly search, interpret and	integrate the relevant literature needed to make decisions.	
	LO6: To analyze and present relevant facts from the field of	f traffic needed to reach conclusions.	
	LO10: To compare and choose technical and technological	solutions in traffic and/or goods flows.	
	LO12: To set up a minor traffic process and critically evaluation	ate it.	

	Learn	ing outcomes by Bloom: (maximum 2 w	erbs for LO)			Level of LO:	
2.4. Expected learning						1- memory,	
outcomes on the course level (4-						2- understanding,	
10 learning outcomes)						3- application,	
						4- analysis,	
						5- evaluation,	
						6- synthesis.	
	1.	Present and comment on the historical	developmen	t of the traffic branches.		6, 3	
	2.	List and explain the main factors for the	ne creation ar	nd development of commodity flows.		1, 2	
	3.	Analyze and evaluate world trade in g	oods.			4, 5	
	4.	Present and comment on the traffic co	nnection of th	ne Republic of Croatia.		6, 4	
	5.	List and compare major transport corr	idors in Euro	pe and the Republic of Croatia.		1, 2	
	6.	4					
	7.	transport.  Use materials and tools to search scien	ntific and pro	fessional literature in native and English langu	ages.	3	
	8.	Present the acquired knowledge, ideas	, problems, a	nd solutions independently and in a team.		6	
2.5. Course content according to	Const	ructive allignement					
detailed curriculum schedule							
	No	Thematic unit	LO of the	Content/teaching methods	Eval	uation	Time
			course				needed
				Listening to the lecture. In the course of			
		Introductory presentation (introducing		seminars, they are introduced to the course			
	1.	students to the course content and	-	content and documents on the e-learning		-	2 h
		obligations)		page of the course by working			
				independently on a computer.			
		Geo-traffic factors of formation and		They listen to a lecture and read literature.		or the written and	
		location of commodity flows (General		At the seminar class, they individually	oral exam students know how to define, numerate and distinguish the		
	2.	-	2, 7, 8	explore the content of this topic area by			6 h
	•	predispositions, socio-economic		searching the database, and on the basis of	main factors for the formation and		
		factors)		it and reading the literature, create a	_	commodity flows	
		ŕ		seminar paper that presents the acquired	(general, natur	al and socio-	

		T				1
				knowledge and presents their own ideas, and ways to solve problems.	economic factors). Identify abbreviations of economic groups of	
				and ways to solve problems.	the world. Seminar paper created	
					and presented (by computer	
					programs).	
_				The listen to a lastere and mad literature	At the colloquium or written and	
				They listen to a lecture and read literature.	*	
				At the seminar class, they individually	oral exam students know to present	
				explore the content of this topic area by	and comment on the historical	
		The development of transport on land		searching the database, and on the basis of	development of transport on land.	
	3.	(development of road, rail, and	1, 3, 7, 8	it and reading the literature, create a	Analyze and evaluate the	6 h
		pipeline transport)		seminar paper that presents the acquired	merchandise trade in land traffic, in	
				knowledge and presents their own ideas,	the world. Seminar paper created	
				and ways to solve problems.	and presented (by computer	
					programs).	
				They listen to a lecture and read literature.	At the colloquium or the written and	
				At the seminar class, they individually	oral exam students know how to	
				explore the content of this topic area by	present and comment on the	
				searching the database, and on the basis of	historical development of water	
		The development of transport on the		it and reading the literature, create a	traffic, the development of seaports.	
	4.	water (history, World and European	1, 3, 7, 8	seminar paper that presents the acquired	Analyze and evaluate the	6 h
		ports, shipping routes, ships for	, - , - , -	knowledge and presents their own ideas,	merchandise of trade in the world's	
		freight)		and ways to solve problems.	water transport. Categorize seaports,	
				and ways to solve problems.	regions, and routes. Seminar paper	
					created and presented (by computer	
_				They use multimedia and network. They	programs).  At the colloquium or written and	
				listen to a lecture and read literature. At the	-	
					oral exam students know present	
				seminar class, they individually explore the	seaports in the world. Identify and	
	5. The development of transport on the water (video films)	1 2 7 2	content of this topic area by searching the	distinguish terminals at the seaport.		
		1, 3, 7, 8	database, and on the basis of it and reading	Analyze and evaluate the cargo	6 h	
			the literature, create a seminar paper that	traffic of the seaport. Categorize		
				presents the acquired knowledge and	seaports, ships, regions, and routes.	
				presents their own ideas, and ways to solve	Seminar paper created and presented	
				problems.	(by computer programs).	

6.	The development of traffic in the air (types of aircraft, aircraft manufacturers, airlines, airports and routes)	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.	At the colloquium or written and oral exam students know to present and comment on the historical development of traffic in the air. Analyze and evaluate the merchandise in air traffic in the world. Categorize airports and airlines. Seminar paper created and presented (by computer programs).	6 h
7.	The development of traffic in the air (video film)	1, 3, 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.	At the colloquium or written and oral exam students know the present airport in the world. Identify and distinguish the types and capacity of aircraft for passenger and cargo transportation. Analyze and evaluate continental air routes. Seminar paper created and presented (by computer programs).	6 h
8.	Transport corridors in Europe (Trans- European transport network, transport corridors in Western and Northern Europe, Pan-European transport corridors, pipeline corridors, inland waterways)	5, 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.	At the colloquium or written and oral exam students know state and compare the main transport corridors in all parts of Europe and all branches of transport. Define the term of traffic corridor. List the countries through which each transport corridor passes. Seminar paper created and presented (by computer programs).	6 h
9.	Transport corridors in the Republic of Croatia (Geographical location, traffic directions, traffic corridors in the road, rail, air, water, and pipeline transport)	4, 5, 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	At the colloquium or the written and oral exam, students can identify and compare major traffic corridors in Europe and the Republic of Croatia. Present, critically evaluate the traffic connection of the Republic of	6 h

		T		T	[		
				knowledge and presents their own ideas,	Croatia in the road, rail, air, pipeline		
				and ways to solve problems.	and inland waterway transport.		
					Seminar paper created and presented		
					(by computer programs).		
				They listen to a lecture and read literature.	At the colloquium or the written and		
				At the seminar class, they individually	oral exam, students know how to		
				explore the content of this topic area by	define the concept of goods traffic.	6 h	
		Merchandise and traffic flows in the		searching the database, and on the basis of	Categorize, analyze and evaluate the		
	4.0	modern world (Concept and	2 7 0	it and reading the literature, create a	world trade of food, raw materials,		
	10.	characteristics of traffic flow,	3, 7, 8	seminar paper that presents the acquired	and industrial products. List the		
		commodity flows of food, raw		knowledge and presents their own ideas,	countries with the largest importers		
		materials, and industrial products)		and ways to solve problems.	and exporters of all types of goods.		
				and ways to solve processing.	Seminar paper created and presented		
			,		(by computer programs).		
				They listen to a lecture and read literature.	At the colloquium or the written and		
		Merchandise and traffic flows in the modern world (Concept and characteristics of traffic flow, commodity flows of food, raw materials, and industrial products)		At the seminar class, they individually	oral exam, students know how to		
				explore the content of this topic area by	define the concept of goods traffic.		
	11.						
				searching the database, and on the basis of	Categorize, analyze and evaluate the		
			3, 7, 8	it and reading the literature, create a	world trade of food, raw materials,	6 h	
			5, 1, 2	seminar paper that presents the acquired	and industrial products. List the		
				knowledge and presents their own ideas,	countries with the largest importers		
				and ways to solve problems.	and exporters of all types of goods.		
					Seminar paper created and presented		
					(by computer programs).		
		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)		They listen to a lecture and read literature.	At the colloquium or the written and		
				At the seminar class, they individually	oral exam students know how to		
				explore the content of this topic area by	analyze and evaluate the trade of		
				searching the database, and on the basis of	products in the Republic of Croatia.		
	12.		3, 4, 7, 8	it and reading the literature, create a	List the products that the Republic of		
				seminar paper that presents the acquired	Croatia imports/exports the most.	6 h	
				knowledge and presents their own ideas,	Present, critically evaluate and		
				and ways to solve problems.	comment on the traffic connection		
				,r	of the Republic of Croatia in all		
					branches of traffic. Seminar paper		
					oraniones of traffic. Bellimar paper		

		1		ı	_				
							created and presented (b	by computer	
							programs).		
	13.	Marco Polo Pr objective, program projects)		6, 7, 8	They use multimedia a listen to a lecture and reaseminar class, they individe content of this topic are database, and on the base the literature, create a spresents the acquired presents their own idease problems.	ad literature. At the ridually explore the a by searching the is of it and reading seminar paper that knowledge and	At the colloquium or the oral exam, students car goal and strategy of the program. Distinguish Marco Polo. Critically professional video film Seminar paper created at (by computer programs)	Marco Polo activities evaluate the as program.	4 h
	14.	European Union Transport (White content areas, prepa transport area for for developing a sustainable transpo - what needs to be of	Paper titles, key aring the European the future, visions competitive and ort system, strategy	6, 7, 8	They listen to a lecture At the seminar class, explore the content of searching the database, it and reading the li seminar paper that pre knowledge and present and ways to solve proble	they individually this topic area by and on the basis of terature, create a sents the acquired s their own ideas,	At the colloquium or oral exam, students defi and strategy of the currer Paper on transport. Comprofessional projects in transport. Seminar paper presented (by computer	ne objective nt EU White ment on EU the field of created and	6 h
	15.	Final consideration preparing for the ex					-		40 h
3. EVALUATION OF STUDEN	T WO	RK							
3.1. Student obligations	In acc	ordance with the Rul	lebook on Study and	the Ruleboo	k on Student Assessment a	and Evaluation: for a	ll full-time students' atter	ndance of at le	east 70%.
	Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (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 participation in classes and through two exams); b) passing the exam (written and oral part of the exam).								
3.2. Student work monitoring	Atten	ding classes	1		Written exam	1 (without	Project		
(enter the share of ECTS credits						colloqiums)			
for each activity so that the total	Exper	imental work			Research	_	Practical work	_	
									_

number of ECTS credits	Esaay Rep		Report	Report		Continuous check	
corresponds to the course credit value)	Colloquiums	1 (without written part of Seminar paper		Seminar paper 0,5		(other)	
varue)		exam)					
	Teaching activities	1	The oral part o	The oral part of exam		(other)	
3.3. Student work-load	The student's workload on	all bases amounts to 1 ECTS poi	int for 30 hours of	work per semester and is estimated as:			
		Obligation		Hours (estimate)			
	27. Attending classe	es		30			
	28. Creating and Pr	esenting seminar paper		30			
	29. Preparation for the Colloquium / exam through self-study				60		
4 CD ADING GNOWN							

#### 4. GRADING SYSTEM

4.1. Evaluation of seminar paper	Elements of evaluation	Bad	Satisfying	Above average		
	Organization	The paper is not organized in a	The paper is well structured with a clear	The paper is well structured with a clear		
		logical order and lacks	distinction between the introduction, the main	distinction between the introduction, the		
		structure.	body of the text and the conclusion.	main body of the text and the conclusion,		
				which are logically interconnected.		
	Terminology, writing	Words and expressions are not	Words and expressions are in line with official	Words and expressions are aligned with		
	style	in line with official	terminology. The writing style is appropriate,	official terminology and show an		
		terminology. The writing style	the sentence structure is clear, the vocabulary is	understanding of their meaning. The writing		
		is not appropriate, the	appropriate and there are few grammatical	style is excellent, the sentences are clear and		
		sentences are too long, of a	errors.	concise, the vocabulary is rich and there are		
		modest vocabulary and with		no grammatical errors.		
		frequent and repeated				
		grammatical errors.				
	Citing and referencing	The sources are not listed at all.	The sources are listed but incomplete and with	The sources are accurately, completely and		
	references	The references do not fit the	errors. The references are relevant to the topic	consistently listed. The references are		
		topic and show a cursory	and show a satisfactory research attitude.	appropriate, their list is "rich" and		
		approach to exploring the		comprehensive and shows a detailed		
		topic.		research approach.		

4.2. Gradeing of the colloquium/written and oral		Bad	Satisfying	Ţ	Above average	
exam	does not know or apply ba	ithout a deeper understanding. It asic terms and concepts. It does explain the contents of the course	It reproduces the basic condifficulty imparts new knowledge the material, explains the test that it supports with example	ledge, understands erms and concepts	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 grade according to the evaluation elements	Active attendance on class	70-75% attendance	76-86% attendance	87-100% attendance		Mental map created, Case studies resolved
		2 points	4 points	7 points		3 points
	Seminar paper	2	3	4		5
		5 points	7 points	8 points		10 points
	Colloquiums/ Written part of exam	2	3	4		5
		50 - 64,9%	65 - 79,9%	80 - 89,9%		90 - 100%
		25 points	30 points	35 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 grade based on the absolute	0 1	red knowledge, skills and eaching + final exam)	Numerical grade		ECTS grade	
distribution	90	- 100%	5 (excellent)		A	
	80	- 89,9%	4 (very good)		В	
	65	- 79,9%	3 (good)		С	
	50	- 64,9%	2 (sufficient)		D	

5. ADDITIONAL INFORMATION ABOUT THE COURSE									
5.1. Compulsory literature	Title	Number of copies in the	Availability via						
(available in the library and via		library	other media						
other media)	Šego Darijo: Traffic corridors and merchandise flows, Script for internal use, Polytechnic of Sibenik,	-	e-learning system						
	Šibenik 2016.	-	Internet website						
	Strategy for Transport Development of the Republic of Croatia for the Period 2014-2030. (selected		Internet website						
	chapters)								
	World trade organization <a href="http://www.wto.org/">http://www.wto.org/</a> (selected chapters)		Internet website						
	Transport in EU <a href="http://ec.europa.eu/transport/index_en.htm(selected chapters">http://ec.europa.eu/transport/index_en.htm(selected chapters)</a>		Internet website						
	Central Bureau of Statistics of the Republic of Croatia <a href="https://www.dzs.hr/">https://www.dzs.hr/</a>								
5.2. Additional literature (at the	Teaching materials from lectures and seminars on the e-Learning system of the Sibenik University	-	e-learning system						
moment of changes and/or	of Applied Sciences for the mentioned course.								
amended of study programme)	International trade statistics <a href="https://www.trademap.org/Index.aspx">https://www.trademap.org/Index.aspx</a>		Internet website						
	UN agency for food <a href="http://www.fao.org/home/en/">http://www.fao.org/home/en/</a>		Internet website						
5.3. Quality assurance methods	The control of students' work quality and the acquisition of necessary knowledge and skills will be e	•							
that ensure the acquisition of	attendance and student activity during classes and provided information on students` progress throu	•							
knowledge, skills and	further guidance to students will be provided in order to increase the efficiency of their work. Students		-						
competences	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 an								
5.4. Informing about the course	It is the responsibility of each student to be regularly informed about the course, the coursework, and		_						
and contacting the course	adjournment will be published in a timely manner on the e-learning site of the course and on the w	ebsite of the Šibenik Universi	ty. Students can contact						
lecturer	teachers during the consultation period (at least one hour per week), while for short questions and exp	planations they can be contacted	ed during class. It is also						
	possible to ask questions by e-mail (from the official e-mail address name@vus.hr), which will be an	swered as soon as possible (no	later than five working						
	days after receiving the e-mail).								

## **Modern traffic systems**

1. GENERAL INFORMATION ABOUT THE COURSE							
1.1. Course title	MODERN TRAFFIC SYSTEMS	1.8. Course code at ISVU	270665 / 270666				
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code at MOZVAG	-				
1.3. Assistants and/or associates	PhD Ana-Mari Poljičak, senior lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30+0+30+0)				
1.4. Study program (professional undergraduate, and professional 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%)	1st, course materials are on-line, 0%				
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)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 %				

2. COURSE DESCRIPTION	
2.1. Course objectives	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; 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 competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF
2.3. Learning outcomes on the study program 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.
	LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members.

	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.								
		Level of LO: 1- remembering, 2- understanding,							
	Learning outcomes according to Bloom's taxonomy:	3- application, 4- analysis, 5- evaluation, 6- synthesis							
2.4. Expected learning outcomes	to enumerate and explain the elements and branches of the transport system.	1, 2							
on the course level	2. to demonstrate knowledge and understanding of course content by defining and describing an interdisciplinary approach to the transport system.	1, 2							
	<ol> <li>to describe, compare and relate the technical and technological characteristics of the branches of transport and modern transportation technologies.</li> </ol>	2, 4							
	4. to identify and evaluate the interdependence of the elements of the transport system.	5, 6							
	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							

	Constr	ructive alignment				
	no	no Thematic unit LO of the course Content/teaching methods			Evaluation	Time needed
2.5. Course content according to detailed curriculum schedule	and detailed plan.	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.	-	2 h
151		Definition of traffic. Historical development of traffic branches.	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	4 h

	1			1 1	1
				development of the elements and	
				branches of the transport system.	
152.	Maritime traffic.	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
153.	Inland waterways.	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
154.	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
155.	Study trip (port of Rijeka).	1, 2, 3, 4, 5, 6	They listen to a lecture.	In colloquium or written and oral exams they identify and explain seaports, and 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.	8 h
156.	Road traffic.	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	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	4 h

	1		a tale also the control of the contr		1
			up with their own ideas, and ways to solve	transport in the transport system. Seminar	
			problems.	work is done in groups with discussion.	
157.	Road traffic.	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
158.	Rail traffic. 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.	4 h
159.	Rail traffic.	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 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.	4 h
160.	Air traffic.	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 air traffic, and define and describe the role of technical and technological characteristics of air traffic in the transport system. Seminar work is done in groups with discussion.	4 h

161.	Postal traffic.	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 postal traffic, and define and describe the role of technical and technological characteristics of postal traffic in the transport system.  Seminar work is done in groups with discussion.	4 h
162.	Telecommunication traffic.	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 telecommunication traffic, and define and describe the role of technical and technological characteristics of telecommunications traffic in the transport system. Seminar work is done in groups with discussion.	4 h
163.	Pipeline transport. Cable car 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 pipeline and cableway traffic, and define and describe the role of technical and technological characteristics of pipeline and cableway traffic in the transport system. Seminar work is done in groups with discussion.	4 h
164.	City traffic. 2nd 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 identify and explain the elements and technologies of urban transport, and define and describe the role of urban transport in the transport system.	4 h
165.	Concluding considerations. Repeating and preparing for the exam.	6, 7	They listen to a lecture and prepare individually for the exam.	-	62 h

3.1. Students` obligations	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: from 0 - 24.9% of ECTS they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% students have the right to take the final exam. 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).							
	Attendance 1	,,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Written exam		without colloquia)	Project	, , , , , , , , , , , , , , , , , , ,	
3.2. Monitoring student work (enter the share of ECTS credits	Experimental work		Research			Practical	work	
for each activity so that the total number of ECTS points	Essay		Report			Continuo		1
corresponds to the credit score of the course)	Colloquium 1 (v	without written m)	Seminar paper	0,5	j	Other		
	Class activity 0,5		Oral exam	1		Other		
3.3. Student workload	30. Attending class 31. Creating and P	Obligation  ses resenting seminar pa	on	hours of	Hours (estimate)  30  30			
4. GRADING SYSTEM	32. Treparation for	the Conoquium / ex	an through sen-study				120	
4. GRADING SYSTEM								1
	Element of evaluation		Bad		Satisfying			ove average
4.1. Grading of seminar work	Organization	The paper is not organ			The paper is well structured with a clear distinction between the introduction the main body of the text and the conclusion.		distinction between the introduction,	

official terminology. The writing style

Terminology,

style

writing

Words and expressions low in line with Words and expressions are in line with

official terminology. The writing style

Words and expressions are aligned with

official terminology and show an

	Citing and references	is not appropriate, the slong, of a modest voca frequent and repeate errors.  The sources are not li references do not fit the a cursory approach to topic.	abulary and with ed grammatical steed at all. The etopic and show	clear, the vocal there are few g	the sentence strubulary is appropriate ammatical error relisted but incores. The reference topic and search attitude.	omplete ces are show a written with the ces are show a written written are complete ces are ces are complete ces are ces are complete ces are ces are complete ces are ces are complete ces are c	e sources are accurately, completely consistently listed. The references appropriate, their list is "rich" and apprehensive and shows a detailed
		Bad		Satisfying		rese	earch approach.  Above average
4.2. Grading of the colloquium / written and oral exam	understanding. D terms and concept	responds by memory, without a deeper nderstanding. Does not know or apply basic erms and concepts. Does not know how to apply a explain the contents of the course with		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, synthand evaluation. It observes the legal accurately and thoroughly explains the corror of the material, and logically connects explains the terms and concepts that it supply with examples. Finds solutions that were originally given. It notes correlations related material.	
	Active	70-75% of the presence	76-86% of t	he presence	87-100% of t	the presence	Case studies resolved
	attendance	0 points	0 po	oints 0 po		ints	0 points
	Seminar paper	2	3		4		5
4.3. Forming the final grade	Schiniai papei	Made and handed over	Made and h	anded over	Made and handed over		Made and handed over
according to the evaluation	Examination /	2	3		4		5
elements	Written	50-64%	65-8	30%	81-9	0%	91-100%
	examination	25-32 points	33-40	points	41-45	points	46-50 points
	Oral part of the	2	3		5		5
	exam	25-32 points	33-40	points	41-45	points	46-50 points

	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS gra	nde		
4.4.5	90 – 100%	5 (excellent)	A			
4.4. Formation of final grade based on absolute distribution	80 – 89,9%	4 (very good)	В			
	65 – 79,9%	3 (good)	С			
	50 - 64,9%	2 (sufficient)	D			
5. ADDITIONAL INFORMATI	ON ABOUT THE COURSE					
5.1. Required literature	Title		Number of copies in the library	Availability via other media		
(available in the library and through other media)	(available in the library and Cerovac, V.: Technology and traffic safety, Faculty of transport and traffic sciences, University of					
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Courses Lectures.  Zelenika, R.: Traffic systems, Faculty of economics, University Zelenika, R.: Multimodal traffic systems, Faculty of economics Sussman, J.: Introduction to Transportation Systems, Artech	ics, University of Rijeka, Rijeka, 2006	5. 3 0 0	No No Yes		
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 ensured through interactive work. Keeping 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.					
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 coursework, and the classroom activities. All notices of 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 Šibenik University. 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).					

## Traffic logistic

1. GENERAL INFORMATION ABOUT THE COURSE								
1.3. Course title	TRAFFIC LOGISTIC	1.8. Course code in ISVU	140773 / 202084					
1.4. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	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+0+30+0)					
1.4. Study programme (professional undergraduate, and professional 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> , 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	X yes □ no					
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								
2.1. Course objectives		ledge and case studies: learn about the elements of the logiste, transportation, and traffic, mastering the modern logistics	•					
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification le	evel 4.2 according to the CROQF.						
2.3. Learning outcomes on the study programme level	LO1: To apply and link professional terms from technolog public in Croatian and English.	y and organization of road traffic in written and oral commu	nication with the professional					
	LO2: To organize and implement team work, and critically	y judge the opinions and attitudes of team members.						
	LO3: To individually and responsibly search, interpret and	l integrate the relevant literature needed to make decisions.						
	LO5: To apply basic legal and economic principles in orga	anization with socially responsible management in technical-	technological subjects.					
	LO6: To analyze and present relevant facts from the field	of traffic needed to reach conclusions.						
	LO7: To apply computer tools for analysis and comparison	n of data, and suggest an optimal solution in traffic process,						
	LO9: To assess and organize processes in the area of road	traffic and/or traffic logistics.						

	LO11	: To identify, predict and propose solu	utions in road	traffic technology and technique.				
	LO12	2: To set up a minor traffic process and	d critically evε	aluate it.				
	LO13	13: To track trends in the development of technique, technology and safety in traffic.						
	Learr	ning outcomes by Bloom: (maximum	2 werbs for I	.O)		Level of LO:		
2.4. Expected learning						1- memory,		
outcomes on the course level (4-	1					2- understanding,		
10 learning outcomes)						3- application,		
	1					4- analysis,		
						5- evaluation,		
						6- synthesis.		
	1	. Define and differentiate basic term	ns and divisior	n in logistics, warehousing, and freight forwarding	ng.	1, 2		
	2	2. Analyze and extract information a	and communic	ation technologies in transport logistics.		4, 2		
	3. Select, evaluate and categorize services in the warehouse business. 3, 5							
	4. Choose the appropriate packaging and analyze the optimal shipment on the pallet and means of transport. 5, 4							
	5. Compare and connect ways of transportation of products, organization of distribution and performance of city logistics.  4, 6							
	6	6. Propose ways of doing urban logistics, handling of products and reduction of inventory costs.						
	7.	. Use materials and tools to search t	the scientific a	and professional literature in their native and Eng	glish languages.	3		
	8	Present the acquired knowledge, i	deas, problem	s, and solutions independently and in a team.		6		
2.5. Course content according to	Cons	tructive allignement						
detailed curriculum schedule								
	No	Thematic unit	LO of the	Content/teaching methods	<b>Evaluation</b> T		Time	
			course				needed	
	1 1		1	Listening to the lecture. In the course of				
	1 1	Introductory presentation	1	seminars, they are introduced to the course				
	1.	(introducing students to the course	- '	content and documents on the e-learning page				
	ll	content and obligations)		of the course by working independently on a computer.				
	2.	The term of logistics (term,	1, 6, 7	They listen to a lecture and read literature. At	1	m or the written and	4 h	
	ل	developmental factors, elements of	'	the seminar class, they individually explore	oral exam, stud	dents know how to		

					1 0 1 1 1 1	
		the logistics system, logistics		the content of this topic area by searching the	define and distinguish basic	
		system division)		database, and on the basis of it and reading	concepts in logistics, types of	
				the literature, create a seminar paper that	logistics, factors of logistics	
				presents the acquired knowledge and presents	development. Seminar paper created	
				their own ideas, and ways to solve problems.	and presented (by computer	
					programs).	
				They listen to a lecture and read literature. At	At the colloquium or the written and	
				the seminar class, they individually explore	oral exam, students know how to	
				the content of this topic area by searching the	define and distinguish the basic	
		Human resources in logistics		database, and on the basis of it and reading	concepts in freight forwarding.	
	3.	(management, freight forwarders,	1, 6, 7	the literature, create a seminar paper that	Enumerate all freight forwarding	4 h
		FIATA documents, customs	-, -, .	presents the acquired knowledge and presents	jobs, distinguish between customs	
		officers).		their own ideas, and ways to solve problems.	documents, human resources	
					working in logistics. Seminar paper	
					created and presented (by computer	
					programs).	
				They listen to a lecture and read literature. At	At the colloquium or the written and	
				the seminar class, they individually explore	oral exam students know how to	
				the content of this topic area by searching the	define and differentiate the basic	
		Warehouses and storage (concept,		database, and on the basis of it and reading	concepts of storage. Distinguish,	
		types and division, the factors for		the literature, create a seminar paper that	describe and present warehouse	
		determining the location,		presents the acquired knowledge and presents	equipment. Analyze and evaluate	
	4.	equipment and furnishing	1, 3, 6, 7	their own ideas, and ways to solve problems.	factors for determining location.	4 h
		warehouses, methods of storage			Select, evaluate and categorize	
		operations)			services in the warehouse business.	
		operations)			List the rules and methods for	
					storing goods. Seminar paper	
					created and presented (by computer	
					programs).	
				They use multimedia and network. They	At the colloquium or the written and	
		Warehousing and storage of		listen to a lecture and read literature. At the	oral exam, students can distinguish,	
	5.	products (video films)	1, 3, 6, 7	seminar class, they individually explore the	describe and present the warehouse	4 h
		products (video mins)		content of this topic area by searching the	equipment. Choose adequate racks	
				database, and on the basis of it and reading	and forklifts for the storage of	
•						

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			the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	products and internal transport. Seminar paper created and presented (by computer programs).	
6.	Freight terminals and Freight-transportation centers (concept and division, development goals of Freight-transportation center, functions, services, 3PL)	1, 3, 6, 7	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.	At the colloquium or the written and oral exam, students can define the basic terms of the Freight terminals and the Freight-transportation centers. Distinguish between Freight-transport centers by size and location. Select and categorize services provided at terminals and centers. Seminar paper created and presented (by computer programs).	4 h
7.	Information and communication system in the function of logistics (elements, methods of communication, modern computer programs, warehouse management system)	2, 6, 7	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.	At the colloquium or the written and oral exam, students can distinguish between information and communication technologies in logistics, warehouse management system, Bar code technology, and RFID identification. Identify the abbreviations of information and communication technologies. Establish the difference, strengths and the weakness of using it. Seminar paper created and presented (by computer programs).	4 h
8.	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.	At the colloquium or the written and oral exam, students can propose ways of manipulating with products (packaging, palletizing) and reducing the cost of supplies (supply chain). Define and describe Supply Chain and Just in time procurement. Identify the difference between	4 h

1	T				
				applying pallets and containers.	
				Seminar paper created and presented	
				(by computer programs).	
			They listen to a lecture and read literature. At	At the colloquium or the written and	
			the seminar class, they individually explore	oral exam, students know how to	
	Transportation in the logistics		the content of this topic area by searching the	distinguish transport modes in	
	system (road, rail, air and pipeline		database, and on the basis of it and reading	logistics, in all branches of traffic.	
9.	transport, inland waterways	2, 4, 6, 7	the literature, create a seminar paper that	Identify the advantages,	4 h
	transport, transport costs, transport		presents the acquired knowledge and presents	disadvantages and costs of	
	documents)		their own ideas, and ways to solve problems.	transportation. Seminar paper	
	,		F	created and presented (by computer	
				programs).	
			They use multimedia nad network. They	At the colloquium or the written and	
			listen to a lecture and read literature. At the	oral exam, students know how to	
			seminar class, they individually explore the	isolate and analyze transport	
	Modern transport technologies in		content of this topic area by searching the	technologies in logistics in the road,	
	transport logistics (conditions for		database, and on the basis of it and reading	rail, water, and air transport.	
10	development, integral transport,	2167		1	4 h
10.		2, 4, 6, 7	the literature, create a seminar paper that	Compare, identify similarities/differences in the	4 N
	technologies on the road, rail,		presents the acquired knowledge and presents		
	water, and air transport)		their own ideas, and ways to solve problems.	transportation of products with	
				modern transportation technologies.	
				Seminar paper created and presented	
				(by computer programs).	
			They use multimedia and network. Using a	At the colloquium or the written and	
			computer program, students arrange the	oral exam, students know	
			shipments on the pallet and the means of	distinguish information and	
			transport. At the seminar class, they	communication technologies and	
	The computer program for		individually explore the content of this topic	computer programs in logistics. Use	
11.	stacking pallets	1, 2, 4	area by searching the database, and on the	the computer program to choose the	4 h
	STACKBUILDER		basis of it and reading the literature, create a	appropriate packaging, draw and	
			seminar paper that presents the acquired	analyze the optimal packaging on	
			knowledge and presents their own ideas, and	the pallet. Seminar paper created	
			ways to solve problems.	and presented (by computer	
			,r	programs).	
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					A ( (1) 11	
	12.	Distribution and ordering of goods (concept, purpose, and structure of the distribution system, distribution networks, costs in distribution, term of the order, processes in ordering)	4, 6, 7	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.	At the colloquium or the written and oral exam, students can define the terms of order and distribution. Propose the ways of orders in case of missing products. Determine the difference between physical distribution and distribution channels. Compare and explain distribution network concepts.	4 h
					Identify distribution costs. Seminar paper created and presented (by computer programs).	
	13.	City logistics (concept, task, and goal of city logistics, initiatives, the structure of city logistics system, optimization of logistics flows)	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.	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. Seminar paper created and presented (by computer programs).	4 h
	14.	Study trip to KONZUM or LIDL Logistics-distribution center (located in Dugopolje and 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	8 h

							products. Suggest manipulation with the reducing inventory cost	_	
	15.	Final considerand preparing for	erations/Repeating or the exam.	-	They listen to a individuals for the	course lecture and prepare exam.	-		62 h
3. EVALUATION OF STUDEN	IT WO								
3.1. Student obligations	Part-t have acade or ext ways:	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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (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 participation in classes and through two exams); b) passing the exam (written and oral part of the exam).						lents who a the next a regular rse in two	
3.2. Student work monitoring (enter the share of ECTS credits		ding classes	1		Written exam	1 (without colloqiums)	Project		
for each activity so that the total	Expe	rimental work			Research	_	Practical work		
number of ECTS credits corresponds to the course credit	Esaay	,			Report		Continuous check		
value)	Collo	quiums	1 (without writte exam)	_	Seminar paper	0,5	(other)		
	Teach	ning activities	1	,	The oral part of example of the oral part of the oral par	m 0,5	(other)		
3.3. Student work-load	The s	tudent's workload			point for 30 hours or	f work per semester and is e		II.	
			Oblig	gation			Hours (estimate)		
		33. Attending cla	isses				30		
	34. Creating and Presenting seminar paper 30								
	35. Preparation for the Colloquium / exam through self-study 60								
4. GRADING SYSTEM									
4.1. Evaluation of seminar paper		Elements of evaluation	Bad	1		Satisfying	Abov	e average	

	0	TD1	TD1 ' 11	1 1.1 1	CD1 ' 11	1 1.1 1
	Organization	The paper is not organized in a	The paper is well structu		* *	structured with a clear
		logical order and lacks structure.	distinction between the intro	,		n the introduction, the
			body of the text and the con	nclusion.	•	text and the conclusion,
	The section of the section of	W/ 1 1	W 1 1		which are logically	
	Terminology, writing	Words and expressions are not in	Words and expressions		•	ssions are aligned with
	style	line with official terminology.	official terminology. The		official terminolo	0.
		The writing style is not	appropriate, the sentence			eir meaning. The writing ne sentences are clear and
		appropriate, the sentences are too long, of a modest vocabulary	the vocabulary is appropri few grammatical errors.	iate and there are	•	lary is rich and there are
		and with frequent and repeated	iew grammatical errors.		no grammatical erro	•
		grammatical errors.			no granimaticai en	J18.
	Citing and	The sources are not listed at all.	The sources are listed bu	t incomplete and	The cources are ac	curately, completely and
	referencing	The references do not fit the	with errors. The references	-		. The references are
	references	topic and show a cursory	topic and show a satisf		appropriate, their	
	references	approach to exploring the topic.	attitude.	stactory research	11 1	shows a detailed research
		approximate corprorming une copie.			approach.	
4.2. Gradeing of the		Bad	Satisfying	g	**	ve average
colloquium/written and oral	It was and a hay manner	, without a deeper understanding.	It reproduces the basic concepts and without		Vnoviladas is at	the level of analysis,
exam		y basic terms and concepts. It does	*	ew knowledge,	•	luation. It observes the
		y or explain the contents of the	understands the material, e	•	•	and thoroughly explains
	* *	y or explain the contents of the	and concepts that it support	•		
	L course with examples			ts with examples		material and logically be
	course with examples.		and concepts that it support	ts with examples.		material, and logically ns the terms and concepts
	course with examples.		and concepts that it support	ts with examples.	connects and explai	ns the terms and concepts
	course with examples.		and concepts that it support	ts with examples.	connects and explaithat it supports	ns the terms and concepts with examples. Finds
	course with examples.		and concepts that it support	ts with examples.	connects and explain that it supports solutions that were	ns the terms and concepts
4.3. Forming the final grade	course with examples.  Active attendance on	70.75% attendence			connects and explai that it supports solutions that were notes correlations w	ns the terms and concepts with examples. Finds not originally given. It with related material.  Mental map created,
4.3. Forming the final grade according to the evaluation		70-75% attendance	76-86% attendance		connects and explain that it supports solutions that were	ns the terms and concepts with examples. Finds not originally given. It with related material.
	Active attendance on	70-75% attendance 2 points		87-100%	connects and explai that it supports solutions that were notes correlations w	ns the terms and concepts with examples. Finds not originally given. It with related material.  Mental map created,
according to the evaluation	Active attendance on class		76-86% attendance	87-100% 7 p	connects and explai that it supports solutions that were notes correlations w attendance	ns the terms and concepts with examples. Finds not originally given. It with related material.  Mental map created, Case studies resolved
according to the evaluation	Active attendance on	2 points	76-86% attendance 4 points	87-100% 7 p	connects and explai that it supports solutions that were notes correlations w attendance	ns the terms and concepts with examples. Finds not originally given. It with related material.  Mental map created, Case studies resolved  3 points

	Written part of exam	50 - 64,9%	65 - 79,9%	80 -	89,9%	90 - 100%	
		25 points	30 points	35 1	points	40 points	
	Oral most of avors	2	3		5	5	
	Oral part of exam	25 points	30 points	35 ]	points	40 points	
4.4. Formation of the final grade	Percentage of acquired knowledge, skills and		Numerical grade		ECTS grade		
based on the absolute	competencies	(teaching + final exam)					
distribution		90 – 100%		5 (excellent)		A	
		80 – 89,9%	4 (very goo	od)		В	
	65 – 79,9%		3 (good)		С		
		50 – 64,9%	2 (sufficier	nt)		D	

## 5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature	Title	Number of copies in the	Availability via other
(available in the library and via		library	media
other media)	Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding and Logistics Processes, Faculty of	-	City of Sibenik library
	Transport and traffic sciences, University of Zagreb, Zagreb, 2010 (selected chapters)	-	PDF (Internet website)
	Mlinarić Josip T.: Freight-transport Centers, Faculty of Transport and traffic sciences, University	2.	
	of Zagreb, 2013 (selected chapters)		
	Zelenika R.: Logistics Systems, University of Rijeka, Faculty of Economics, Rijeka, 2005		
	(selected chapters)	-	City of Sibenik library
	Bloomberg D.: Logistics, MATE, Zagreb School of Economics and Management, Zagreb, 2006		City of Sictima netwry
	(selected chapters)		
5.2. Additional literature (at the	Teaching materials from lectures and seminars on the e-Learning system of the Sibenik		e-learning system
moment of changes and/or	University of Applied Sciences for the mentioned course.		City of Sibenik library
amended of study programme)	Zelenika R.: Transport Systems, University of Rijeka, Faculty of Economics, Rijeka, 2001.		City of Stoellik Horary
	Zelenika R.: Transport and freight forwarding business, University of Rijeka, Faculty of		City of Sibenik library
	Economics, Rijeka, 2001.		Internet website
	Logistics www.logistika.com.hr		internet website

5.3. Quality assurance methods	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of			
that ensure the acquisition of	attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for			
knowledge, skills and	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			
competences	as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from			
	Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.			
5.4. Informing about the course	It is the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of classes or possible			
and contacting the course	adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact			
lecturer	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).			