POLYTECHNIC OF SIBENIK
Undergraduate professional study of Traffic

Trg Andrije Hebranga 11
22000 Šibenik

Sibenik, December 2019

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THE CURRICULUM OF THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

DIRECTIONS: ROAD TRAFFIC, POSTAL TRAFFIC

Academic year 2019/2020

Dean of Polytechnic of Sibenik
Ph.D. Ljubo Runjić, senior lecturer

Head of Undergraduate professional study of Traffic
Ivana Beljo, sc. ing. mat., senior lecturer

Sibenik, December 2019

Undergraduate professional study of Traffic Polytechnic of Šibenik is valued with 180 ECTS credits, which are obtained through enrolled subjects. After enrollment in the academic year, students enroll obligatory subjects and optional subjects whose sum is awarded a maximum of 30 ECTS credits by semester, up to 60 ECTS credits per year, in accordance with the articles of the "Study Regulations" at the Polytechnic of Sibenik.

Enrollment in the academic year

The student is obliged to enroll in the following academic year within the set deadline for enrollment. If one does not enroll in the academic year, the person loses the student's status and rights. Enrollment deadlines are published on the official board and on the internet website of the Polytechnic. A student enrolls at least 27 ECTS credits in one semester and a maximum of 35 ECTS credits. If the student did not regulate the obligations (no signature) for the subject enrolled in the academic year, by enrolling in the new academic year, he/she shall record the repetition of the academic year in which he/she re-enrolls the subject and again fulfills all obligations in that subject. The student is only allowed to enroll in the same subject twice during their studies.

Enrollment in the senior academic year

A student in one academic year enrolles at least 60 ECTS credits. A student acquires the right to enroll in a higher academic year if by the deadline for enrollment he/she has duly fulfilled all obligations from the study program which he/she has assumed by enrolling in the previous year of study and has passed exams in subjects which, according to the credit system, established by the study program, enable him/her to enroll in the higher year of study. Students who have taken the exam before the teaching committee (Committee) in the current academic year and have not yet met the requirements for a positive assessment (have passed the exam) are obliged to re-enroll, listen and regulate their course obligations. Students enroll in a higher academic year if they have earned a minimum of 50 ECTS credits from the previous study year by enrolling in all previous non-completed courses and at least 60 ECTS credits from the previous academic year.

Repetition of the academic year with the possibility of partial enrollment of subjects with the higher academic year

Students have the right to enroll in the repetition of the academic year with partial enrollment of subjects from the higher academic year, subject to the following conditions:

- partial enrollment of the subject from the second (2nd) academic year, if in the first (1st) academic year he/she has earned at least 30 ECTS credits,
- partial enrollment of the subject from the third (3rd) academic year, if in the second (2nd) academic year he/she obtained at least 30 ECTS credits.

Partial enrollment is carried out in such a way that the student enrolls all non-completed subjects from the previous academic year and certain subjects from the higher academic year. The total number of ECTS credits in the recurrent year with partial enrollment is a minimum of 50 ECTS points and a maximum of 60 ECTS points.

The repetition of the academic year

A student who has not obtained the right to enroll in a higher academic year is obliged to enroll in the next academic year to repeat the academic year. A student who repeats the year, on the index is placed under "Repeats". A student may enroll in the repetition of each academic year only once. If even after the repetition of the academic year, the student fails to fulfill all the obligations from the study program from the corresponding academic year, he/she loses the right to continue his/her studies.

Before submitting the Final paper for assessment and defense, the student must pass all courses and earn a minimum of 163 ECTS credits.

1. REQUIREMENTS AND RESULTS OF THE STUDY PROGRAM

The programme of Undergraduate professional study of Traffic is oriented towards professional requests of engineers in traffic. The study offers technical, technological and organizational education necessary for conducting traffic processes, management of equipment and materials, practical application of modern technologies in the organization of transport with the aim of reaching optimal technical, technological and economical effects with protection of environment. The bacis aim of education is to define and analyze theoretical, technical, technological and practical solutions of contemporary transport technologies and systems, logistics of optimal solutions in traffic processes that consequently all make a base for successful realization of traffic processes.

The general competences that the student acquires by completing the studies is the ability to solve problems, analyze, synthesize and evaluate, develop self-learning and literature research, teamwork, planning and organizing, improve numeracy and digital skills, oral and written business communication and demonstrate morality, responsibility, conscientiousness in work and behavior in accordance with solid ethical principles .

During the studies, students acquire specific knowledge, skills and competences related to theoretical and practical knowledge and skills required for the analysis and evaluation of technical-technological road traffic solutions, the application of computer tools for analyzing and comparing the data to be submitted optimal solution in the transport process, evaluation and organization of processes in the road traffic area and transport logistics, the application of fundamental legal and economic principles in organization with socially responsible operations in technical-technological subjects, and monitoring trends in technology development, technology and traffic safety.

The Undergraduate professional study of Traffic consists of six semesters.

2. EXPECTED LEARNING OUTCOMES ON UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

Learning outcomes (LO) of the Undergraduate professional study of Traffic Polytechnic of Sibenik in the academic year 2019./2020. are:

1. To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English,
2. To organize and implement team work, and critically judge the opinions and attitudes of team members,
3. To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions,
4. To apply knowledge from the field of natural and technical sciences to problems in road traffic,
5. To apply basic legal and economic principles in organization with socially responsible management in technical-technological subjects,
6. To analyze and present relevant facts from the field of traffic needed to reach conclusions,
7. To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process,
8. To solve problems in traffic by using analytical and/or graphical methods,
9. To assess and organize processes in the area of road traffic and/or traffic logistics,
10. To compare and choose technical and technological solutions in traffic and/or goods flows,
11. To identify, predict and propose solutions in road traffic technology and technique,
12. To set up a minor traffic process and critically evaluate it,
13. To track trends in the development of technique, technology and safety in traffic.

3. LIST OF LECTURERS WHO TEACH (LECTURES, SEMINARS, EXERCISES) AT THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

NAME AND SURNAME OF THE LECTURER	COURSE NAME	CONTACT E-MAIL	CONSULTATION
Employees of the Polytechnic of Sibenik who teach			
Jerko ACALIN, sc. ing. IT., lecturer.	Basics of computer science	jerko@vus.hr	Cabinet 6
Darijo ŠEGO, univ. spec. traff., senior lecturer.	Traffic and spatial planning Traffic Logistics Traffic corridors and merchandise flows Road traffic infrastructures Postal technology and organization Postal and money circulation Information systems in postal traffic Professional practice Semestral professional practice Transport geography	darijo@vus.hr	Cabinet 14
Ana-Mari POLJIČAK, sc. ing. traff., senior lecturer.	Transshipment resources I Transshipment resources II Internal transport and storage Distributional centres and terminals Resources and exploitation of road traffic vehicles Infrastructure of postal-telecomunications traffic Planning of postal network Technical means of postal-telecomunications traffic Traffic in tourism	jankovic@vus.hr	Cabinet 14

M.sc. Martina LJUBIĆ HINIĆ, senior lecturer.	Modern traffic systems Technology and organization of public city transport Technology and organization of road traffic Traffic techniques	ljubicvus@gmail.com	Cabinet 14
Nikolina GAĆINA, mag. ing., senior lecturer.	Knowledge of goods	nikolina@vus.hr	Cabinet 1
M.sc. Ivana KARDUM GOLEŠ, senior lecturer.	English language I English language II English language III English language IV	ivanakg@vus.hr	Cabinet 15
Ivana BELJO, sc. ing. mat., senior lecturer.	Mathematics Operational research in traffic	ibeljo@vus.hr	Cabinet 11
Želimir MIKULIĆ, sc. ing. IT, senior lecturer.	Operational research in traffic	zelimir.mikulic@vus.hr	Cabinet 12
Ana PERIŠIĆ, sc. ing. mat., univ. spec. oec., senior lecturer.	Statistics in Traffic	sisak@vus.hr	Cabinet 3
M.sc. Tanja RADIĆ LAKOŠ, senior lecturer.	Traffic and ecology	tanja@vus.hr	Cabinet 2
Ph.D. Dijana MEČEV, senior lecturer	Economics of Traffic	dijana@vus.hr	Cabinet 2
Luka OLIVARI, mag. ing. mech., lecturer.	Graphic communications Physics Technical mechanics Introduction to mechanical engineering Theory of vehicle movement	lolivari@vus.hr	Cabinet 14

Associates of the Polytechnic of Sibenik who teach

Ph.D. Dragan BOLANČA, regular professor	Traffic law	dragan.bolanca@pravst.hr	Prema rasporedu predavanja
Ph.D. Ivan MAVRIN, regular professor	Resources and exploitation of road traffic vehicles	mavrin@fpz.hr	Cabinet 12
Ph.D. Ernest BAZIJANAC, regular professor	Introduction to mechanical engineering	ebazijanac@fpz.hr	According to the schedule of lectures
M.sc. Danijel MILETA, senior lecturer	Basics of electrical engineering and electronics Information systems in road traffic	danijel.mileta@gmail.com	Cabinet 1
M.sc. Josip PAIĆ, senior lecturer	Physics	josip.paic@skole.hr	Cabinet 14
M.sc. Srećko ĐURANOVIĆ, senior lecturer	Introduction to mechanical engineering	sduranovic@fpz.hr	Cabinet 15
Ante PRAŽEN, sc. ing. traff., lecturer	Traffic and spatial planning	ante.prazen1@gmail.com	According to the schedule of lectures
Luca OLIVARI, mag. math., assistant	Mathematics	lolivari25@outlook.com	According to the schedule of lectures Cabinet 11

4. PLACE OF TEACHING OF THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

Teaching at the Undergraduate professional study Management is performed at the Polytechnic of Sibenik, in Sibenik, at the address "Trg Andrije Hebranga 11". In the mentioned location, apart from the service offices, there are 12 lecture halls with a total area of 757 m^2.

The lecture halls in which the teaching process takes place is to provide optimal conditions in view of the enrolled students.

Number of enrolled students in academic 2019/2020

STUDY YEAR	REGULAR STUDENTS		EXTRAORDINARY STUDENTS	
	first enrollment	repeats	first enrollment	repeats
I study year	16	2	7	1
II study year	22	3	1	1
III study year	18	1	4	0

The specified space contains spatial capacities that, in keeping with the standards of higher education, enable students to have good quality monitoring and participation in educational activities.

Classes at the Polytechnic of Sibenik take place from Monday to Friday (in exceptional cases on Saturdays in the morning) according to the fixed schedule of the lectures published on the official notice boards and on the official internet website of the Polytechnic. In accordance with the requirements of the *Regulation on the content of license and conditions for issuing license to perform activities of higher education, carrying out study programs and re-accreditation of higher education institutions* (Public papers No. 24/10) Article 5 (2), the Polytechnic meets the ratio of the number of students enrolled and the space available for teaching.

5. LIST OF COURSES, LECTURES AND ASSOCIATES, HOURS AND WORKLOAD OF STUDENTS, AT THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

Undergraduate professional study of Traffic (direction: Road traffic) – I. Study year									
COURSES		**LECTURER**		**COURSE SCHEDLUE**					**ECTS credits**
Head of course	**Name**	**Lecturer**	**Seminars/ Exercises**	**L** Hours per week	**S** Hours per week	Number of groups	**E** Hours per week	Number of groups	
I. semester									
Beljo I.	Mathematics	Beljo I.	Olivari L.	3	-	-	3	1	**8**
Paić J.	Physics	Paić J.	Olivari L.	2	-	-	2	1	**5**
Olivari L.	Graphic communications	Olivari L.	Olivari L.	2	-	-	2	1	**5**
Acalin J.	Basics of computer science	Acalin J.	Acalin J.	1	-	-	3	1	**5**
Gaćina N.	Knowledge of goods	Gaćina N.	Gaćina N.	2	1	1	-	-	**4**
Kardum Goleš I.	English language I	Kardum Goleš I.	Kardum Goleš I.	2	-	-	1	1	**3**
II. semester									
Ljubić Hinić I.	Modern traffic systems	Ljubić Hinić M.	Ljubić Hinić M.	3	1	1	-	-	**6**
Mileta D.	Basics of electrical engineering and electronics	Mileta D.	Mileta D.	2	-	-	2	1	**5**
Šego D.	Traffic Logistics	Šego D.	Šego D.	2	2	1	-	-	**4**
Kardum Goleš I.	English language II	Kardum Goleš I.	Kardum Goleš I.	2	-	-	1	1	**3**
Olivari L.	Technical mechanics	Olivari L.	Olivari L.	3	-	-	3	1	**8**
Radić Lakoš T.	Traffic and ecology	Radić Lakoš T.	Radić Lakoš T.	2	1	1	-	-	**4**
L – lectures, **S** – seminars, **E** – exerciese.									

Undergraduate professional study of Traffic (direction: Road traffic) – II. Study year									
COURSES		**LECTURER**		**COURSE SCHEDLUE**					**ECTS Credits**
Head of course	**Name**	**Lecturer**	**Seminars/ Exercises**	**L** Hours per week	**S** Hours per week	Number of groups	**E** Hours per week	Number of groups	
III. semester									
Đuranović S.	Introduction to mechanical engineering	Đuranović S./ Bazijanac E./ Olivari L.	Olivari L.	3	-	-	3	1	**6**
Poljičak A-M.	Transshipment resources I	Poljičak A-M.	Poljičak A-M.	2	2	1	2	1	**5**
Poljičak A-M.	Internal transport and storage	Poljičak A-M.	Poljičak A-M.	2	-	-	2	1	**5**
Beljo I.	Operational research in traffic	Beljo I./ Mikulić Ž.*	Beljo I.	2	-	-	1	1	**4**
Mečev D.	Economics of Traffic	Mečev D.	Mečev D.	2	-	-	1	1	**3**
Šego D.	Traffic Logistics	Šego D.	Šego D.	2	2	1	-	-	**4**
Kardum Goleš I.	English language III	Kardum Goleš I.	Kardum Goleš I.	1	-	-	2	1	**3**
IV. semester									
Poljičak A-M.	Transshipment resources II	Poljičak A-M.	Poljičak A-M.	2	-	-	1	1	**4**
Olivari L.	Theory of vehicle movement	Olivari L.	Olivari L.	2	-	-	1	1	**4**
Poljičak A-M.	Distributional centres and terminals	Poljičak A-M.	Poljičak A-M.	2	2	1	-	-	**5**
Šego D.	Traffic corridors and merchandise flows	Šego D.	Šego D.	2	2	1	-	-	**4**
Bolanča D.	Traffic law	Bolanča D.	Bolanča D.	2	1	1	-	-	**3**
Ljubić Hinić M.	Technology and organization of public city transport	Ljubić Hinić M.	Ljubić Hinić M.	2	1	1	-	-	**5**
Kardum Goleš I.	English language IV	Kardum Goleš I.	Kardum Goleš I.	1	-	-	2	1	**3**
Šego D.	Professional practice	Šego D.	Šego D.	-	-	-	60	-	**2**

L – lectures, **S** – seminars, **E** – exerciese.

*HEAD OF COURSE Beljo I. performed 26 hours of lectures, Mikulić Ž. performed 4 hours of lectures.

Undergraduate professional study of Traffic (direction: Road traffic) – III. Study year									
COURSES		**COURSES**		**COURSES**					
Head of course	**Name**	**Lecturer**	**Seminars/ Exercises**	**L** Hours per week	**S** Hours per week	Number of groups	**E** Hours per week	Number of groups	**ECTS Credits**
V. semester									
Šego D.	Road traffic infrastructures	Šego D.	Šego D.	3	2	1	1	1	**6**
Mavrin I.	Resources and exploitation of road traffic vehicles	Mavrin I.	Poljičak A-M.	3	-	-	1	1	**5**
Ljubić Hinić M.	Technology and organization of road traffic	Ljubić Hinić M.	Ljubić Hinić M.	3	-	-	2	1	**7**
Ljubić Hinić M.	Traffic techniques	Ljubić Hinić M.	Ljubić Hinić M.	3	1	1	-	-	**6**
Mileta D.	Information systems in road traffic	Mileta D.	Mileta D.	2	1	1	-	-	**3**
Šego D.	Transport geography*	Šego D.	Šego D.	2	1	1	-	-	**3**
Poljičak A-M.	Traffic in tourism*	Poljičak A-M.	Poljičak A-M.	2	1	1	-	-	**3**
L – lectures, **S** – seminars, **E** – exerciese. *OPTIONAL COURSE - the student selects one optional courses offered.									
VI. semester									
Šego Darijo	Semestral professional practice°	-	-	-	-	-	390	-	**13**
Mentor of final paper	**Final paper**	-	-	-	510	-		-	**17**
°SEMESTRAL PROFESSIONAL PRACTICE is performed at a company with which the Polytechnic of Sibenik has signed an agreement on professional cooperation.									

6. ACADEMIC CALENDAR FOR THE ACADEMIC YEAR 2019/2020

The academic calendar of the Polytechnic of Sibenik for the academic year 2019/2020 was adopted at the 31st session of the Expert Council of the Polytechnic of Sibenik, held in September 2019.

WINTER SEMESTER:

- lectures in the winter semester runs from September, 30 2019 to January, 25 2020,
- winter holidays run from December, 23 2019 to January 3 2020,
- additional consultative lectures for extraordinary students will be held during the semester at a time to be determined by each lecturer,
- the winter regular exam period runs from January 27 to February 21 2020.

SUMMER SEMESTER:

- summer semester lectures run from February 24 to June 5 2020,
- additional consultative classes for extraodrinary students will be held during the semester at a time to be determined by each lecturer,
- the summer regular exam period runs from June 8 to July 8 2020

AUTUMN EXAM TIME PERIOD:

- the autumn regular exam period runs from August 24 to September 19 2020

SEMESTER TESTING:

- winter semester testing and summer semester enrollment will run from February 13 to February 20, 2020,
- summer semester testing and academic year enrollment will run July 13 to July 18 2020, and from September 24 to September 30 2020.

7. NATIONAL PUBLIC HOLIDAYS AND NON-WORKING DAYS IN THE REPUBLIC OF CROATIA

DATE OF HOLIDAY	NAME OF PUBLIC HOLIDAYS
October 8th	Independence Day
November 1st	All Saints' Day
25th and 26th December	Christmas and St. Stephen's Day
January 1st	New Year's Day
January 6th	Epiphany
April 13nd	Easter Monday
May 1st	International Workers' Day
June 22nd	Anti-Fascist Struggle Day
June 25th	Statehood Day
August 5th	Homeland Thanksgiving Day
August 15th	Assumption of Mary

8. CALENDAR OF THE EXAMS, FOR ACADEMIC YEAR 2019/2020 AT THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

Dear students, the tables below show the dates of regular written exams in the winter, summer, and autumn exam periods, while the exact exam time (hourly rate) will be published on the official internet website of the Polytechnic of Sibenik (understudy Traffic - Exam deadlines) and on official bullet board in the hallway of the Polytechnic. The dates of exam periods for the other months of the year are issued by the Expert Council of the Polytechnic of Sibenik upon the proposal of the Dean, and they are published separately on the website and the bullet board of the Polytechnic. Due to unforeseen reasons, it is possible to move the specified dates for the written exams.

HEAD OF COURSE	NAME OF COURSE	EXAM DATES					
		February		June / July		August / September	
I. STUDY YEAR (I. semester).							
Beljo Ivana	Mathematics	04.02.	18.02.	16.06.	30.06.	01.09.	15.09.
Paić Josip	Physics	05.02.	19.02.	17.06.	01.07.	02.09.	16.09.
Olivari Luka	Graphic communications	29.01.	12.02.	10.06.	24.06.	26.08.	09.09.
Acalin Jerko	Basics of computer science	30.01.	13.02.	12.06.	26.06.	28.08.	11.09.
Gaćina Nikolina	Knowledge of goods	06.02.	20.02.	23.06.	08.07.	27.08.	10.09.
Kardum Goleš Ivana	English language I	04.02.	18.02.	16.06.	30.06.	01.09.	15.09.
I. STUDY YEAR (II. semester).							
Šego Darijo	Traffic and spatial planning	29.01.	12.02.	16.06.	30.06.	28.08.	11.09.
Ljubić Hinić Martina	Modern traffic systems	28.01.	11.02.	18.06.	02.07.	25.08.	08.09.
Šego Darijo	Traffic logistic	30.01.	14.02.	09.06.	23.06.	27.08.	10.09.
Mileta Danijel	Basics of electrical engineering and electronics	27.01.	10.02.	08.06.	23.06.	24.08.	07.09.
Perišić Ana	Statistics in traffic	04.02.	18.02.	16.06.	30.06.	26.08.	09.09.
Kardum Goleš Ivana	English language II	04.02.	18.02.	16.06.	30.06.	01.09.	15.09.
Olivari Luka	Tehnical mechanics	03.02.	17.02.	15.06.	29.06.	31.08.	14.09.
Radić Lakoš Tanja	Traffic and ecology	06.02.	20.02.	18.06.	02.07.	03.09.	17.09.

II. STUDY YEAR (III. semester).							
Đuranović Srećko	Introduction to mechanical engineering	03.02.	17.02.	15.06.	29.06.	31.08.	14.09.
Poljičak Ana-Mari	Transshipment resources I	31.01.	14.02.	10.06.	24.06.	26.08.	09.09.
Mečev Dijana	Economics of Traffic	05.02.	19.02.	17.06.	01.07.	03.09.	17.09.
Beljo Ivana	Operational research in traffic	04.02.	18.02.	16.06.	30.06.	01.09.	15.09.
Poljičak Ana-Mari	Internal transport and storage	30.01.	14.02.	09.06.	23.06.	27.08.	10.09.
Šego Darijo	Traffic Logistics	30.01.	14.02.	09.06.	23.06.	27.08.	10.09.
Kardum Goleš Ivana	English language III	04.02.	18.02.	16.06.	30.06.	01.09.	15.09.
II. STUDY YEAR (IV. semester).							
Poljičak Ana-Mari	Transshipment resources II	30.01.	14.02.	09.06.	23.06.	27.08.	10.09.
Poljičak Ana-Mari	Distributional centres and terminals	31.01.	14.02.	10.06.	24.06.	26.08.	09.09.
Olivari Luka	Theory of vehicle movement	05.02.	19.02.	17.06.	01.07.	02.09.	16.09.
Sladoljev Jasmina	Basics of management	04.02.	18.02.	09.06.	23.06.	01.09.	15.09.
Šego Darijo	Traffic corridors and merchandise flows	29.01.	12.02.	16.06.	30.06.	28.08.	11.09.
Bolanča Dragan	Traffic law	29.01.	12.02.	17.06.	01.07.	26.08.	09.09.
Ljubić Hinić Martina	Technology and organization of public city transport	28.01.	11.02.	18.06.	02.07.	25.08.	08.09.
Kardum Goleš Ivana	English language IV	04.02.	18.02.	16.06.	30.06.	01.09.	15.09.
III. STUDY YEAR (V. semester).							
Šego Darijo	Road traffic infrastructures	30.01.	14.02.	09.06.	23.06.	27.08.	10.09.
Mavrin Ivan	Resources and exploitation of road traffic vehicles	31.01.	14.02.	10.06.	24.06.	26.08.	09.09.
Ljubić Hinić Martina	Technology and organization of road traffic	28.01.	11.02.	18.06.	02.07.	25.08.	08.09.
Ljubić Hinić Martina	Traffic techniques	28.01.	11.02.	18.06.	02.07.	25.08.	08.09.
Mileta Danijel	Information systems in road traffic	27.01.	10.02.	08.06.	23.06.	24.08.	07.09.
Poljičak Ana-Mari	Traffic in tourism	31.01.	14.02.	10.06.	24.06.	26.08.	09.09.
Šego Darijo	Transport geography	29.01.	12.02.	16.06.	30.06.	28.08.	11.09.

9. THE CURRICULUM AND THE CONTENT OF ALL COURSES AT UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC WITH THE EXPECTED LEARNING OUTCOMES AND LITERATURE

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Ivana Beljo	1.8. Course code in ISVU	129837
1.2. Course title	**MATHEMATICS**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	Luca Olivari	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45+45+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	2
1.6. Year of study	1st	1.13. Modernization	Yes
1.7. Credit score (ECTS)	8	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: • To adopt knowledge and skills of the analytical way of thinking, and the logical way of concluding in further education. • To familiarize with basic concepts of mathematics and prepare them for their practical application.		
2.2. Terms of course entry and required competences	4 year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	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.		

	LO8: To solve problems in traffic by using analytical and / or graphical methods.

2.4. Expected learning outcomes on the course level

Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering, 2- understanding, 3- application, 4-analysis, 5-evaluation, 6-synthesis*
1. To perform fundamental operations on sets.	4
2. To carry out fundamental operations on matrices and vectors.	4
3. To propose a method and solve systems of linear equations.	5,4
4. To conduct basic analysis of functions of one variable.	4
5. To derive the functions of one variable.	4
6. To solve integrals by applying the appropriate integration techniques.	4
7. To apply linear algebra and functional analysis methods in transport problems solving.	4,5

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-	3 h
2.	Sets. Sets of numbers.	1, 4, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to enumerate and distinguish basic concepts related to assemblies and perform basic operations on sets.	6 h

	3.	Matrices and determinants. The inverse matrix. Systems of linear equations.	2, 3, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to to define matrices, perform basic computational operations with matrices, calculate the determinant and inverse of a matrix, recommend a method for solving a system of linear equations and solve a system and apply it to problems.	9 h
	4.	Vectors. Scalar, vector and mixed vector product.	2, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors.	9 h
	5.	Revision for colloquium. Colloquium. Functions	1, 2, 3, 4, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	-	40 h
	6.	Functions – basic terms, Elementary functions, Composition of the functions. Inverse function.	1, 4, 7	Write the colloquium.	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.	40 h
	7.	Limits of sequences. Limit of the function. Continuous functions.	4, 5, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to to calculate limits.	9 h
	8.	Derivatives.	1, 4, 5, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to solve derivatives.	6 h
	9.	Basic analysis of functions of one variable.	1, 4, 5, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to to examine the basic properties of a function, to analyze the solutions obtained and to	6 h

					draw a graph of the function based on them, and to comment on the obtained solutions.	
	10.	Revision for colloquium. Colloquium. Integrals.	1, 4, 5, 6, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	-	40 h
	11.	Indefinite Integrals. Definite Integrals.	6, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to to solve an indefinite and definite integral.	6 h
	12.	Substitution Rule and Integration By Parts	6, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to solve an indefinite integral using the method of substitution and partial integration.	6 h
	13.	Applications of Integration.	4, 6, 7	Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises.	In colloquium or written and oral exams students know how to analyze and sketch a graph of functions, and solve a definite integral.	6 h
	14.	Applications of Integration. Revision for colloquium. Colloquium.	6, 7	Write the colloquium.	-	40 h
	15.	Revision		Listen to lectures and read literature.	-	40 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%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list. Students who have during the course achieved: • from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year; • from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period;

<table>
<tr><td></td><td colspan="6">

- 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 three colloquia); b) by passing the exam (written and oral part of the exam).
</td></tr>
<tr><td rowspan="6">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)</td><td>Attendance</td><td>1</td><td>Written exam</td><td>4 (without colloquia)</td><td>Project</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>Research</td><td></td><td>Practical work</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Report</td><td></td><td>Continuous examination</td><td>1</td></tr>
<tr><td>Colloquium</td><td>4 (without written exam)</td><td>Seminar paper</td><td></td><td>Other</td><td></td></tr>
<tr><td>Class activity</td><td>1</td><td>Oral exam</td><td>1</td><td>Other</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>3.3. Student workload</td><td colspan="6">Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as:
1. Attending classes and exercises 90 hours
2. Preparing colloquia or exams through individual work 150 hours</td></tr>
<tr><td colspan="7">4. GRADING SYSTEM</td></tr>
<tr><td>4.1. Grading seminar papers</td><td colspan="6"></td></tr>
<tr><td>4.2. Grading colloquia/ written and oral exam</td><td colspan="6">
<table>
<tr><th>Unsatisfactory</th><th>Satisfactory</th><th>Above average</th></tr>
<tr><td>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.</td><td>Reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with examples.</td><td>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.</td></tr>
</table>
</td></tr>
<tr><td>4.3. Final grade according to evaluation elements</td><td colspan="6">
<table>
<tr><td rowspan="2">Active course attendance</td><td>70-74,9% of attendance</td><td>75-79,9% of attendance</td><td>80-89,9% of attendance</td><td>90-100% of attendance</td></tr>
<tr><td>2 points</td><td>5 points</td><td>10 points</td><td>20 points</td></tr>
</table>
</td></tr>
</table>

	Colloquia/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.3. Final grade according to absolute division

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (satisfactory)	D
50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Mrušić, S., Matematika I udžbenik s riješenim primjerima, Zagreb, 2007. (selected chapters)	7	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching material and exercises Babić Z., Tomić Plazibat N., Poslovna matematika, Ekonomski fakultet Split, 2003 (selected chapters) Babić Z., Tomić N., Aljinović Z., Matematika za ekonomiste, Ekonomski fakultet Split, 2004 (selected chapters) Harshbarger R.J., Reynolds J.J., Mathematical Applications for the Management, Life and Social Sciences, Houghton Mifflin Company, Boston, 2004. (selected chapters)		
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).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Josip Paić	1.8. Course code in ISVU	187585
1.2 Course title	**PHYSICS**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	Luka Olivari	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+30+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	1st	1.13. Modernization	Yes
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 master the physical laws necessary for mastering and understanding the courses on which the technical knowledge of the transport profession rests.	
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	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic LO8: To solve problems in traffic by using analytical and / or graphical methods	
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,*

		5 - evaluation, *6 – synthesis.*
	1. Describe the basic concepts in physics	2
	2. Recognize physical quantities and units of measure.	2
	3. Graphically and analytically reduce the system of vectors, and divide the vectors into their components.	3
	4. Compare the basic laws of motion of a particle or solid body and identify the type of motion in a given example.	4, 4
	5. Distinguish Newton's laws, equilibrium conditions, laws of conservation of mechanical energy and amount of motion, and choose appropriate laws to solve a given problem.	4, 5
	6. Analyze the movement of the body from a graphical representation of the path, displacement, speed or acceleration as a function of time, and the conversion of various forms of energy into work and vice versa.	4
	7. Identify the causes of motion of a particle or solid, and evaluate the effects of the force on the particle or solid.	4, 5
	8. Distinguish between the basic concepts and laws of fluid mechanics, such as hydrostatic pressure, Pascal's law, Archimedes's law, continuity equation and Bernoulli's equation, and choose appropriate regularities to solve a given problem.	4, 5
	9. Apply physical laws adopted to solve complex problems	6

2.5. Course content according to detailed curriculum schedule	**Constructive allignement**					
	No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	Introductory presentation (introducing students to the content and obligations of the course). Introduction to mechanical engineering, determining the shape and	1, 2, 3, 4	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 page of the course. The lecture is performed with prepared presentations, recorded	Describe: path, shift speed and acceleration. Distinguish between the mean and current values of worry and acceleration, to analyze body movements. At the colloquium or the written and oral exam they define and explain the basic concepts, define,	**4 h**

		dimensions of machine parts, selection of materials		experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	explain and calculate the physical quantities and units of measure.	
	2.	Free fall. Vertical shot. Curved track motion (horizontal and oblique shot, circular motion).	1, 4, 5	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Describe the free fall. Investigate and describe complex movements. Analyze circular motion as uniformly accelerated motion. At the colloquium or the written and oral exam they know: to define, explain, identify and compare types of motion; solve numerical tasks from the specified area.	**4 h**
	3.	Forces and laws of motion (force and mass, Newton's laws of mechanics, body weight and density). The amount of motion and the law of conservation of the amount of motion.	1, 3, 4, 5, 6	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Describe the interaction of body and types of forces. Draw a force diagram. Add up force vectors. Apply Newton's Laws. Relate force impulse and amount of motion. Apply the law of conservation of the amount of motion. At the colloquium or the written and oral exam they know: to define, explain and distinguish Newton's laws and the laws of conservation of the amount of motion; choose physical laws to solve a given problem, solve numerical problems from the specified area.	**4 h**
	4.	Friction. Centripetal force. Elastic force. Motion of a rigid body (rigid body, force moment, rotation of a rigid	1, 3, 4, 5, 6	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Relate friction to centripetal force and elastic force. Explain the concept of centripetal force and centripetal acceleration. Distinguish the motion of a material point and a rigid body and make	**4 h**

		body about a fixed axis, moment of inertia)			an analogy.At the colloquium or the written and oral exam they can define and explain friction, analyze the influence of friction; identify the causes and type of motion, evaluate the consequences of the action of forces and moments; solve numerical tasks from the specified area.	
	5.	Rotation work and power. Rotational kinetic energy. Moment of amount of motion. An analogy between the laws of translation and rotation.	1, 4, 5, 7	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Relate work and power to work and power when rotating. Solve and comment on examples. At the colloquium or the written and oral exam they can define and explain work, strength, energy and other phenomena during rotation; solve numerical tasks from the specified area.	**4 h**
	6.	Statics (force action on a rigid body, equilibrium of a rigid body affected by more forces). The action of parallel forces on a rigid body. The emphasis.	1, 3, 5, 9	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples The exercises demonstrate how to solve tasks. Independent task solving.	Relate the action of force to a material point and to a rigid body. Apply and analyze equilibrium equations for a solid body, written and oral examination, evaluate the consequences of the action of a system of forces and / or static moment using graphical and analytical methods; solve numerical tasks from the given area.	**4 h**
	7.	A pair of forces. Solid-state equilibrium conditions (examples). Types of balance. Motion relativity and inertial forces (the principle of relativity, inertial forces in a	1, 3, 5	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for the colloquium.	Determine the equilibrium conditions of a rigid body using examples. Apply and analyze equilibrium equations for a solid body, written and oral examination, evaluate the consequences of the action of a system of forces and / or static moment using graphical and analytical	**4 h**

		straight and circularly accelerated system).			methods; solve numerical tasks from the given area.	
	8.	Work and force (work of constant force, work of variable force).	1, 6, 7, 9	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Link energy change and work done. Link the concept of work and strength. At the colloquium or the written and oral exam they can define and explain work and strength, identify the type of motion of a particle or solid, solve numerical problems in the field of kinematics.	**4 h**
	9.	The work of the resultant force. Energy (kinetic energy, potential energy, energy conservation law.	1, 6, 7	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Describe examples of conversion of different forms of energy. Apply the law of conservation of energy. Express utility. At the colloquium or the written and oral exam they can define and explain the basic terms in the specified area, identify the type of motion of a particle or solid body; evaluate the action of force; analyze energy conversions; solve numerical tasks in the field of kinematics.	**4 h**
	10.	Collisions. Mechanical tools and machines (mechanical effect of the machine, slope, wedge, wheels and pulleys, machine efficiency).	1, 5, 6	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Apply the law of conservation of motion and the law of conservation of energy. At the colloquium or the written and oral exam they can define, explain and distinguish the terms and physical laws from the specified area; solve numerical tasks.	**4 h**
	11.	Gravity (Newton's law of general gravity). The work of gravitational force and	1, 5	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples.	Describe the historical development of the idea of the motion of the celestial body and the variability of scientific	**4 h**

		gravitational potential energy. Gravitational phenomena around the Earth.		The exercises demonstrate how to solve tasks. Independent task solving.	ideas. At the colloquium or the written and oral exam they can define, explain and distinguish the terms and physical laws from the specified area; solve numerical tasks.	
	12.	Gravity in the solar system. Gravity in space. Fluid mechanics (aggregate states and properties of substances, fluids at rest)	1, 5, 8	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Describe the motions and interactions of the body in the solar system. Explain the expression for the first and second cosmic velocities and relate them to the weightless state. Analyze examples involving the application of Newton's law of gravity. At the colloquium or the written and oral exam they can define, explain and distinguish basic concepts in fluid mechanics; solve numerical problems in the field of fluid mechanics.	**4 h**
	13.	The buoyancy. Archimedes' Law. Fluids in motion (fluid flow and velocity, continuity equation)	1, 8, 9	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving.	Describe basic terms in hydrostatics. Apply expressions to examples. At the colloquium or the written and oral exam they can define, explain and distinguish basic concepts in fluid mechanics; solve numerical problems in the field of fluid mechanics.	**4 h**
	14.	Bernoulli equation (applications of Bernoulli equation). Force in real liquids (shape of free surface of fluid, dissipative forces in liquids)	1, 8, 9	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for the colloquium.	Describe basic concepts in hydrodynamics. Apply Bernoulli's equation to examples. At the colloquium or the written and oral exam they can define, explain and distinguish basic concepts in fluid mechanics; solve	**4 h**

					numerical problems in the field of fluid mechanics.	
	15.	Resistance of the agent. Fluid Flow and Chaos Physics. Final consideration.	1, 8	The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. They prepare individually for the exam.	At the colloquium or the written and oral exam they can define, explain and distinguish basic concepts in fluid mechanics; solve numerical problems in the field of fluid mechanics.	**4 h**

3. EVALUATION OF STUDENT WOR

3.1. Student obligations	In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of Student Performance: Full-time students are required to attend classes at least 70%, which is also a requirement for obtaining the lecturer`s signature. Students can take the final exam in the course in two ways: a) during the course, by taking colloquiums and oral part of the exam; b) passing the written and oral part of the exam.					
3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	2	Written exam	2 (without colloquiums)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous check	
	Colloquiums	2 (without written exam)	Seminar paper		Field works or Study trips	
	Teaching activities		The oral part of exam	1	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), preparation of seminar work and presentation (30 hours).					

	Obligation	***Hours (estimated)***
1.	Attending classes	60
2.	Colloquiums and written exam individual preparation	60
3.	Oral exam individual preparation	30

4. FORMATION OF STUDENT GRADE

	Elements of evaluation	**Bad**	**Satisfying**	**Above average**

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

4.3. Forming the final grade according to the evaluation elements	Colloquiums/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova
	The oral part of exem	2	3	4	5
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Paić Josip, FIZIKA udžbenik, Veleučilište u Šibeniku, Šibenik, 2017.	-	on-line (e-learning)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course Introduction to Mechanical Engineering. 2. Kulišić, P.: Mehanika i toplina, Školska knjiga, Zagreb, 2005. 3. Kulišić, P.: Riješeni zadaci iz mehanike i topline, Školska knjiga, Zagreb, 2005 4. Mikuličić, Varićak, Vernić,: Fizika, zbirka zadataka 1-4, Školska knjiga, Zagreb, 2012 5. Halliday, Resnick, Walker: Fundamentals of phisics, Sixth Edition	- - - - - -	on-line (e-learning) city library city library city library city library
5.3. Quality assurance methods that ensure the	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		

acquisition of knowledge, skills and competences	their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Luka Olivari	1.8. Course code in ISVU	129836
1.2. Course title	**GRAPHIC COMMUNICATIONS**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+30+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	1st	1.13. Modernization	Yes
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; 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 LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process LO8: To solve problems in traffic by using analytical and / or graphical methods		
	Learning outcomes by Bloom: (maximum 2 werbs for LO)		**Level of LO**: *1 - memory,*

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)		*2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Describe the basic concepts in graphical communication	1, 2
	2. Draw orthogonal projections based on the given isometric view	4
	3. Design an isometric representation of the body based on the given orthogonal projections	4
	4. Distinguish the rules of technical presentation and apply them to the technical drawing.	4, 3
	5. Draw a technical drawing in the AutoCAD computer program.	4

2.5. Course content according to detailed curriculum schedule	**Constructive allignement**					
	No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	Introductory presentation (introducing students to the content and obligations of the course). 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.	**4 h**
	2.	Technical letter, line types and widths, paper formats, scale and components of the technical drawing.	1, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical display. Independent exercise.	At the colloquium 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**
	3.	Fundamentals of geometric structures.	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of	At the colloquium or the written and oral exam: define and explain the basic	**4 h**

				technical presentation. Independent exercise.	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.	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	**4 h**

					technical layout and apply them to the technical drawing;	
	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 between the rules of the technical view and apply them to the technical drawing.	**4 h**
	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 technical drawing; draw a technical drawing in an AutoCAD computer program.	**4 h**
	14.	AutoCAD, self-made workshop drawing.	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**
	15.	Final consideration, repetition and preparation for the exam.	-	Listen to a lecture and read literature. They prepare individually for the exam.	-	**4 h**
3. EVALUATION OF STUDENT 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. Students can take the final exam in the course in two ways: a) during the course, by taking colloquiums and oral part of the exam; b) passing the written and oral part of the exam.					

3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	2	Written exam	2 (without colloquiums)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous check	
	Colloquiums	2 (without written exam)	Seminar paper		Field works or Study trips	
	Teaching activities		The oral part of exam	1	(other)	

3.3. Student work-load

Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), preparation of seminar work and presentation (30 hours).

	Obligation	***Hours (estimated)***
1.	Attending classes	60
2.	Colloquiums and written exam individual preparation (drawing)	30
3.	Colloquiums and written exam individual preparation (AutoCAD)	30
4.	Oral exam individual preparation	30

4. FORMATION OF STUDENT GRADE

	Elements of evaluation	**Bad**	**Satisfying**	**Above average**
4.1. Evaluation of written exam	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.
	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	Knows basic and advanced commands in a computer program, uses them without errors. Able to

			computer program with a little help and suggestions.	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.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supports them with examples. Knows the expert terminology.	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles of physical laws, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts and supports them with examples. Finds solutions that were not originally given. It notes correlations with related material. Fluent in professional terminology.

4.3. Forming the final grade according to the evaluation elements					
	Colloquiums/ Written exam	2	3	4	5
		10-12 points	13-15 points	16-17 points	18-20 points
	Colloquiums/ AutoCAD	2	3	4	5
		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

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D

	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE			
5.1. Compulsory literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	1. Koludrović, Ć.: Tehničko crtanje u slici s kompjuterskim aplikacijama, Rijeka, 2009. 2. George Omura: Osnove programa AutoCAD 2008, MIŠ d.o.o. Zagreb, 2007.	-	City library City library
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course 2. Opalić, M., Kljajin, M., Sebastijanović, S.: Tehničko crtanje, Zrinski d.d., Čakovec/Slavonski Brod, 2007. 3. Klem N., Koški Ž., Otković I.: Tehničko crtanje i CAD, Građevinski fakultet Sveučilišta u Osijeku, Osijek 2006. 4. Galeta T., Glazina V., Kljajin M.: AutoCAD Osnove za tehničko crtanje, Strojarski fakultet u Slavonskom brodu Sveučilišta u Osijeku, Slavonski brod 2005. 5. Herold Z.: Računalna i inženjerska grafika, Fakultet strojarstva i brodogradnje Sveučilišta u Zagrebu, Zagreb 2003. 6. Budimir D.: Vježbe iz AutoCAD-a, Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb 2010.	-	on-line (e-learning) - - - On-line On-line
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Jerko Acalin	1.7. Credit score (ECTS)	5
1.2. Course title	**BASICS OF COMPUTER SCIENCE**	1.8. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	15L+45P
1.3. Assistants and/or associates	no	1.9. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1.level- materials on-line, 0%
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	1.10. Number of course revisions	2
1.5. Course status (obligatory, optional)	Obligatory	1.11. Modernization	Yes
1.6. Year of study	1st	1.12. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	To become familiar with the role and organization of information systems, as well as to know how to apply information technology in work and business. To apply the basics of IT knowledge on IT, to enable direct communication with technical staff or business partners responsible for procurement, maintenance and introduction of new technologies or renewal of existing IT structures.		
2.2. Terms of course entry and required competences	Four-year high school education completed; having a qualification at level 4.2.		
2.3. Learning outcomes on the study programme level	To apply knowledge from the field of natural and technical sciences to problems in road traffic To analyze and present relevant facts from the field of traffic needed to reach conclusions To apply computer tools for analysis and comparison of data, and to suggest an optimal solution in traffic process To solve problems in traffic by using analytical and / or graphical methods		

2.4. Expected learning outcomes on the course level	- It is expected that students will be able to: to use the operating system (MS Windows) use text editing software, use a spreadsheet calculator use a presentation application use the Internet and e-mail be familiar with the concepts of IS and IT, the basic structure of computers and network systems Know how to deal with IS security issues

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introduction to the course and detailed curriculum. Exercises: Introducing eLearning and Webmail	-	They listen to a lecture. In the course of the seminar, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	-	2 h
2.	Informatics and Computing Exercises: MS Windows basics work	1	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	At the midterm exam or the written and oral exam, they know how to use the MS Windows operating system	6 h
3.	Historical Computer Development Exercises: MS Windows file management	1	They listen to a lecture and read literature. They learn about the basics of working in MS Windows Explorer on a computer	At the midterm exam or the written and oral exam, you can use MS Windows Explorer.	6 h

	4.	Information Society Exercises: MS Word basic introduction	2	They listen to a lecture and read literature. They work on a computer	At the colloquium or the written and oral exam they can use MS Word	6 h
	5.	Computer networks and the Internet Exercises: MS Word work with text editing	2	They listen to a lecture and read literature. They work on a computer.	At the colloquium or the written and oral exam they can edit text using MS Word	6 h
	6.	S planning and design Exercises: MS Word - creating a template	3	They listen to a lecture and read literature. They work on a computer	At the midterm exam or the written and oral exam they can create a template using MS Word	6 h
	7.	Information systems and technologies Exercises: MS Word - an example of a seminar paper	3	They listen to a lecture and read literature. They work on a computer	At the midterm exam or the written and oral exam they can create a seminar paper using MS Word.	6 h
	8.	Preparation for the colloquium Colloquium 1.	1, 2, 3,4	They listen to a lecture and read literature. They work on a computer	Colloquiums work on a computer and send the result via web-mail	36 h
	9.	Von Neuman's computer model Exercises: MS Excel - spreadsheet design	4	They listen to a lecture and read literature. They work on a computer	At the colloquium or the written and oral exam they can design tables using MS Excel.	6 h
	10.	IS security Exercises: MS Excel - application of basic formulas	4,5	They listen to a lecture and read literature. They work on a computer	They can apply the basic functions and formulas in MS Excel to the midterm exam or the written and oral exam.	6 h
	11.	Exercises: MS Excel - Charts	4,5	They listen to a lecture and read literature. They work on a computer	They can create various types of charts in MS Excel at the midterm or the written and oral exam.	6 h
	12.	MS Excel - Creating a Template	6	They listen to a lecture and read literature. They work on a computer	They can create a template in MS Excel at the midterm or the written and oral exam.	6 h

	13.	Power Point - Creating a presentation using completed forms	6	They listen to a lecture and read literature. They work on a computer	At the midterm or the written and oral exam they can make a presentation using the completed forms.	6 h
	14.	Power Point - Create a presentation by editing the slide matrix	6	They listen to a lecture and read literature. They work on a computer	At the colloquium or the written and oral exam they can make a presentation by creating their own slide matrix	6 h
	15.	Concluding Considerations / Repetition and Preparation for the Colloquium and or Exam Colloquium 2.	4,5,6	They listen to a lecture and prepare individually for the exam. They take a colloquium on a computer	The colloquium is done on a computer and the result is sent via web-mail	40 h

2.6. Teaching methods	□ **lectures** □ seminars and workshops □ **practical exercises** □ distance education □ mixed e-learning □ field teaching	□ **independent tasks** □ multimedia and network □ laboratory □ mentoring □ other	2.7. Comments: Exercises are performed independently on computers in an information cabinet, with instructions and assistance from the exercisers, and using e-learning scripts.

2.8. Students` obligations	Students who have achieved during the course: • From 0 - 24.9% of ECTS credits - they score F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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 two exams); b) during class (active participation in class and passing exams (written and oral part of the exam). Students are required to carry a USB memory stick and their AAI @ EduHr password in class and practice. The requirement for signing and passing the exam is for full-time students the presence of 70% in the classes and 80% in the exercises. For an extraordinary 70% on exercise. (or at least one passing midterm => 50%)

2.9. Monitoring student work (enter the share of	Attendance	1	Written exam	3 (without colloquia)	Project	

ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	3 (without writing)	Seminar paper		Other	
	Class activity		Oral exam	1	Other	
2.9. Student workload	Radno opterećenje studenta po svim osnovama iznosi za 1 ECTS bod 30 sati rada u semestru i procjenjuje se kao: ***Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:*** ***Obligation Hours (estimate)*** ***1. Attendance 60*** ***2. Preparation for the mid-term / midterm exam 90***					
2.10. Grading and evaluating students` work during classes and on the exam	Students may choose to take the written (practical) exam by means of a midterm exam (2 midterm exams) or an exam. Each colloquium carries a max. 100 points. Students who score 50 or more in both exams will successfully pass the exam. Successfully passed both exams completely replace the practical part of the exam, and oral (theoretically) is compulsory for everyone. Once completed, the practical part of the exam is taken into account in the following deadlines.					

4. FORMATION OF ASSESSMENT			
4.1. Assessment and evaluation of students' work during class and at the final exam	Students may choose to take the written (practical) exam by means of a midterm exam (2 midterm exams) or an exam. Each colloquium carries a max. 100 points. Students who score 50 or more in both exams will pass the exam successfully. Successfully passed both exams completely replace the practical part of the exam, and oral (theoretically) is compulsory for everyone. Once completed, the practical part of the exam is taken into account in the following deadlines.		
4.2. Assessment of the midterm / written and oral exam	**Bad**	**Satisfying**	**Above average**
	t responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the principles of law, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts 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	70-74.9% attendance	75-79,9% attendance	80-89.9% attendance	90-100% attendance
		2 points	5 points	10 points	20 points
	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral part of the exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number ratin	ECTS grade
	90 – 100%	5 (izvrstan)	A
	80 – 89,9%	4 (vrlo dobar)	B
	65 – 79,9%	3 (dobar)	C
	60 – 64,9%	2 (dovoljan)	D
	50 – 59,9%	2 (dovoljan)	E

2.11. Compulsory literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Information systems and technologies; Polytechnic of Šibenik, Jerko Acalin, 2017 - textbook with PP presentation Basics of Informatics (Windows, Word, Excel, PoverPoint), University of Šibenik, Jerko Acalin, 2017 - script	5	e-learning

2.12. Additional literature (at the moment of changes and/or amended of study programme)	EXCEL 2013 EXCELL 2010, Milan Korać			
	Excel 2010 Data analiysis and Business Modeling, Wayne l. Winston	5 (2)		
	Word 2010 Microsoft Press, A Division of Microsoft Corporation			
	Power Pivot for Excell 2010 Marko Russo i Alberto Ferari			
2.13. 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.			
2.14 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).			

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Title	**KNOWLEDGE OF GOODS**	1.8. ISVU course code	187586
1.2. Lecturer	Nikolina Gaćina	1.9. MOZVAG course code	
1.3. Assistants and/or associates	None	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate Professional Study Trafic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2.
1.6. Study year	1st	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 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.
	LO 1: To apply and link professional terms from technologgy and organization of road traffic in written and oral communication with the profesional puublic in croation and English.

2.3. Learning outcomes on the study programme level	LO 2: To organize and implement team work and critically judge the opinions and atitudes od team members	
	LO 3: To individually and responsibly search, interpret and integrate the revevant literature needed to make decisions	
	LO 6: To analyze and present relevant facts from the field of traffic needed to reach conclusions	
	LO 10: To compare and choose technical and technollogical solutions in treffic and / or traffic logistics	
	LO 13: to track trends in the development of technique, technology and safety in traffic	
2.4. Expected learning outcomes on the course level	**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. Categorize and compare the basic concepts of the science of knowledge of goods	4, 5, 6
	3. Compare and distinguish product types, their identification, labeling, and transportation and storage conditions	4, 5
	4. Categorize and compare types of packaging material	4, 5
	5. Analyze and evaluate the specific characteristics and reasons for the application of particular packaging materials for different products	4, 5,6
	6. Distinguish and compare different processes of food preservation in relation to the longevity and preservation of the nutritional value of the product	4, 5, 6
	7.Analyze and anticipate the importance of food and non-food commodities of today and today	4,5
	8. Present the acquired knowledge, ideas, problems and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule	**Constructive alignment**					
	No:	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**

	1.	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 basic concepts of the science of knowledge of goods.	4 h
	2.	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
	3.	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
	4.	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
	5.	Packaging. Types of packaging material.	1, 2, 3, 4, 5, 6, 8	They listen to a lecture, watch multimedia, present a seminar paper, followed by a discussion, and read literature. They watch multimedia.	At the colloquium or the written and oral exam they know: define the packaging and explain the importance of packaging the product, list and describe the advantages and disadvantages of individual packaging materials, choose the appropriate packaging material for the specific product and explain	10 h

					their choice. List and analyze the primary functions of packaging material.	
	6.	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
	7.	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
	8.	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
	9.	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.	10 h

					And evaluate combining different canning methods.	
	10.	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
	11.	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
	12.	Hazardous Substances.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and classify the types of dangerous substances, to analyze the possible danger of the same.	6 h
	13.	Transport and disposal of hazardous substances.	1, 2, 3, 4, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and classify the labeling of hazardous substances during transport, to evaluate the disposal and labeling of hazardous waste.	6 h
	14.	Strategic Goods.2. Colloquium.	1, 2, 3, 5, 6, 7, 8	They listen to a lecture, present a seminar paper, followed by a discussion, and read literature	At the colloquium or the written and oral exam they know: to define and categorize strategic goods, to explain their importance.	4 h

	15.	Concluding Considerations / Repetition and Exam Preparation.		They listen to a lecture and prepare individually 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 F (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 FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; • 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 (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	0,25	Written exam	2 (without colloquiums)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	3 (without the written and oral exams)	Seminar paper	0,75	Other (inscribe)	
	Class activities		Oral exam	1 (without colloquiums)	Other (inscribe)	

3.3. Student workload

The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:

	Commitment	***Hours (estimate)***
1.	Attending classes	45
2.	Creating and Presenting seminar paper	10
3.	Preparation for the Colloquium / exam through self-study	65

4. GRADING

4.1. Seminar paper grading

Valuation Element	**Poor**	**Satisfying**	**Above average**
Organization	The paper is not organized in a logical order and its structure is lacking.	The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion.	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another
Terminology, writing style	Words and phrases are low harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent and repeated grammatical mistakes.	Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.	Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
Quoting and referencing	Sources are not specified at all. The references do not match the topic and show a superficial approach to the research topic.	Sources are listed, but incomplete and with errors. The references are appropriate for the subject and show a satisfactory research attitude.	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

Poor	**Satisfying**	**Above average**
Give answer by memory, no deeper understanding. Does not know and does not apply the basic terms and concepts. Cannot apply or explain the contents of the course.	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and thoroughly explains the content of the subject, and logically links and explains

					the terms and concepts that it encapsulates. Find solutions that are not originally given. There is a correlation with correlative subjects.
4.3. Creating a final grade according to evaluation elements	Active participation in the lessons	70 of attendance	71-80% of attendance	81-90% of attendance	91-100%
		2 points	3 points	4 points	5 points
	Research paper	2	3	4	5
		8 points	10 points	12 points	15 points
	Colloquium / written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	35 points	40 points	50 points
	Oral exam	2	3	5	5
		15 points	20 points	25 points	30 points

4.4. Creating a final grade according to absolute allocation	Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and through other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	1. Gacina, N. (2012). Knowledge of goods. Internal script of the Polytechnic of Šibenik, Šibenik.		e-learnigng VUŠ-a
	2. Lazibat, T. (2004). Knowledge of goods and quality management. Synergy Publishing, Zagreb. (Chapters selected)	4	

5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Andrijanić, I., Balen, M., Lazibat, T. (2001). Knowledge of merchandise in commerce. Mikrorad, Zagreb. (Chapters selected)	4	
	2. Štrumberger, N. (2000). Handling of materials in traffic. Faculty of Transportation Sciences, 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 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. 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 Polytechnic. 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).		

VELEUČILIŠTE u ŠIBENIKU

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

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

2.3. Learning outcomes on the study programme level	LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions

Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering, 2- understanding, 3- application, 4-analysis, 5-evaluation, 6-synthesis*
1. to understand, apply and link basic terms from the professional terminology of English road traffic and use them in written and oral communication	2, 3
2. to apply grammatical structures in texts and assignments	3
3. to interpret and use tenses in real-life context	3, 4
4. to develop a shorter essay within the topics of the course	3
5. to reproduce an email in English	3
6. to communicate in a foreign language within the subjects of the course, to express one own opinions	6
7. to compare and evaluate different traffic solutions	5
8. to analyse medium complex texts and solve tasks	4
9. to use part of the general language competency at levels B1/B2	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-	2 h

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

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

					to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	7.	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.	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
	8.	Moving About Towns – Verb Tenses I Kolokvij	1, 2, 3, 5, 6, 9	Listen to lectures and take part in discussion. Write the colloquium.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating	10 h

					different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	9.	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
	10.	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	6 h

					and solve tasks, use part of other language competences at B1 level.	
	11.	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
	12.	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

	13.	A City At Sea- Living Under Cover – Future Tenses	1,2, 3, 9	Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
	14.	„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

	15.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions 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 Polytechnic of Šibenik and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
3.2. Monitoring student work (enter the share of ECTS credits for each	Attendance	0,5	Written exam	1 (without colloquia)	Project	
	Experimental work		Research		Practical work	

activity so that the total number of ECTS points corresponds to the credit score of the course)	Essay		Report		Continuous examination	
	Colloquium	1 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	1	Other	
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 1. Attending classes and exercises 45 hours 2. Preparing colloquia or exams through individual work 45 hours					
4. GRADING SYSTEM						
4.1. Grading seminar papers	-					

4.2. Grading colloquia/ written and oral exam	**Unsatisfactory**	**Satisfactory**	**Above average**
	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 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.

4.3. Final grade according to evaluation elements						
	Active course attendance	70-75% of attendance	76-86% of attendance	87-100% of attendance		Maksim
		3 points	7 points	20 points		20
	Seminar paper					
	Colloquia/ Written exam	2	3	4		
		50-64,9%	65-79,9%	80-89,9%		90-
		25 points	30 points	35 points		40
	Oral exam	2	3	4		

	25 points	30 points	35 points		40

4.3. Final grade according to absolute division

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (satisfactory)	D
50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Katja Bošković Gazdović: "English textbook of Transport I",Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	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“, Veleučilište u Rijeci, Prometni odjel, 2007. 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 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	10	X (elearning, handouts)
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey,		

	monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the 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).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	**MODERN TRAFFIC SYSTEMS**	1.8. Course code at ISVU	129846
1.2. Course lecturer	Martina Ljubić Hinić	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45L+15S)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Transport	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	1st	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 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 HKO.

2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.
	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.
	LO7: Apply computer tools for data analysis and comparison, and propose an optimal solution in the traffic process.
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.
	LO13: Follow trends in technology, technology and traffic safety.
2.4. Expected learning outcomes on the course level	**Learning outcomes according to Bloom's taxonomy:**
	1. to enumerate and explain the elements and branches of the transport system 1, 2 2. to demonstrate knowledge and understanding of course content by defining and describing an interdisciplinary approach to the transport system 1, 2 3. to describe, compare and relate the technical and technological characteristics of the branches of transport and modern transportation technologies 2, 4 4. to identify and evaluate the interdependence of the elements of the transport system 1, 6, 5 5. to use materials and tools to search scientific and professional literature in their native and English languages 3 6. to present the acquired knowledge, ideas, problems and solutions independently and in a team 3

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

				introduced to the course content and documents on the e-learning page of the course.		
		Elements of the transport system. Historical development of traffic.	1, 2, 4	Listen to lectures and read literature.	In colloquium or the written and oral exam they define the system and elements of the transport system and explain the interdisciplinary nature of the transport system, and state the historical development of the elements and branches of the transport system.	3 h
	2.	Maritime transport.	1, 2, 3, 5	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or the written and oral exam they identify and explain the elements and technologies of maritime transport, and define and describe the role of technical and technological characteristics of maritime transport in the transport system.	4 h
	3.	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
	4.	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	4 h

					branches of transport. Seminar work is done in groups with discussion.	
	5.	Study trip (Rijeka port).	1, 2, 3, 4, 5, 6	They listen to a lecture.	In colloquium or written and oral exams they identify and explain seaports, and 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
	6.	Road transport.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they specify and explain the elements and technologies of road transport, and define and describe the role of technical and technological characteristics of road transport in the transport system. Seminar work is done in groups with discussion.	4 h
	7.	Road transport.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they specify and explain the elements and technologies of road transport, and define and describe the role of technical and technological characteristics of road transport in the transport system. Seminar work is done in groups with discussion.	4 h
	8.	Rail transport. 1st Colloquium	1, 2, 3, 4, 5, 6	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they specify and explain the elements and technologies of railway transport, and to define and describe the role of technical and technological characteristics of railway transport in the transport system. Seminar work in groups is prepared with discussion.	42 h

	9.	Rail 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 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
	10.	Air 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 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
	11.	Postal 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 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
	12.	Telecommunication 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 telecommunication traffic, and define and describe the role of technical and technological characteristics of telecommunications	4 h

					traffic in the transport system. Seminar work is done in groups with discussion.	
	13.	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
	14.	City traffic. Taxi 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.	42 h
	15.	Concluding considerations. Repeating and preparing for the exam.	6, 7	They listen to a lecture and prepare individually for the exam.	-	44 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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).					
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	1	Written exam	1 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	1
	Colloquium	1 (without written exam)	Seminar paper	1	Other	
	Class activity	1	Oral exam	1	Other	
3.3. Student workload	Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as: 1. Attendance 45 h 2. Design of seminar work and presentation 15 h 3. Preparation for the mid-term / midterm exam 120 h					

4. FORMATION OF GRADES

	Element of evaluation	**Bad**	**Satisfying**	**Above average**
4.1. Grading of seminar work	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.
	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.

4.2. Grading of the colloguium / written and oral exam	**Bad**	**Satisfying**	**Above average**
	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements					
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		0 points	0 points	0 points	0 points
	Seminar paper	2	3	4	5
		Made and handed over	Made and handed over	Made and handed over	Made and handed over
	Examination / Written examination	2	3	4	5
		50-64%	65-80%	81-90%	91-100%
		25-32 points	33-40 points	41-45 points	46-50 points
	Oral part of the exam	2	3	5	5
		25-32 points	33-40 points	41-45 points	46-50 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B

	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Cerovac, V.: Tehnika i sigurnost prometa; FPZ, Zagreb, 2001. (odabrana poglavlja) Božičević, D., Kovačević, D.: Suvremene transportne tehnologije, FPZ, Zagreb, 2002.	3	No
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Lectures 2. Zelenika, R.: Prometni sustavi, Ekonomski fakultet u Rijeci, Rijeka, 2001. 3. Zelenika, R.: Multimodalni prometni sustavi, Ekonomski fakultet u Rijeci, Rijeka, 2006. 4. Sussman, J. : Introduction to Transportation Systems, Artech House, United Kingdom, 2000.	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 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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Danijel Mileta	1.8. Course code in ISVU	187598
1.2. Course title	**BASICS OF ELECTRICAL ENGINEERING AND ELECTRONICS**	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 (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	3
1.6. Year of study	1st	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □

2. COURSE DESCRIPTION		
2.1. Course objectives	The main objective of the course is to familiarize students with basic knowledge in the field of electrical engineering and electronics.	
2.2. Terms of course entry and required competences	Four-year secondary education completed; Possession of a Level 4.2 qualification according to the CROQF.	
2.3. Learning outcomes on the study programme level	IU4: Apply knowledge of natural and technical sciences to road transport problems. IU8: Solve traffic problems using analytical and / or graphical methods.	
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,*

		6 – synthesis.
	1. Set and calculate basic equations of simple circuits and magnetic circuits.	3
	2. Draw or sketch schematics of basic electrical devices	4, 3
	3. Identify and compare electrical and magnetic phenomena.	2, 4
	4. Describe electronic components and basic electrical devices.	1
	5. Solve simple tasks in the field of electrostatics and electromagnetism.	3

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introduction to the course and detailed curriculum.	-	Students listen to a lecture. On the computer, they are introduced to the course content and documents on the e-learning course page.	-	2 h
2.	Basics of electricity	3, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe basic concepts and identify causes and phenomena of electricity, draw or sketch the same, and solve or calculate simple tasks in the field of electricity.	6 h
3.	Electric current and associated phenomena	1, 3, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe basic concepts, identify the basic phenomena of direct current and related phenomena, draw or sketch them, and solve simple tasks in the field of direct current.	4 h

	4.	Simple DC circuits I	1, 2, 3, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe the basic concepts, the behavior of electrons in simple DC circuits, draw or sketch the same, and set and solve or calculate tasks on the topic of simple DC circuits.	4 h
	5.	Simple DC circuits II	1, 2, 3, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe the basic concepts, the behavior of electrons in simple DC circuits, draw or sketch the same, and set and solve or calculate tasks on the topic of simple DC circuits.	4 h
	6.	Capacitor joints	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe basic terms and related phenomena in capacitors and capacitor joints, draw or sketch the same, and solve or calculate simple tasks of capacitor joints	4 h
	7.	Energy, work, power	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe the basic terms and related phenomena related to energy work and power of electricity, draw or sketch the same, and solve or calculate simple tasks in the specified field.	4 h
	8.	Lighting	3	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the oral exam, they can define, describe, enumerate and distinguish	1 h

					basic concepts from the domain of luminaries.	
	9.	Repetition / Colloquium	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	It is necessary to recognize, set and solve simple tasks from thematic units 2-7. At the midterm, written and oral exam they can define and describe the basic concepts of electromagnetism.	4 h
	10.	Electromagnetism	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define and describe the basic concepts of electromagnetism, identify related phenomena, draw and sketch them, and solve or calculate simple tasks in the field.	9 h
	11.	Transformer	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define, describe, draw or sketch the mode of operation of the transformer and the phenomena that occur in it and to solve or calculate simple tasks in the field.	4 h
	12.	AC generator	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium, written and oral exam they can define, describe, draw or sketch the principle of operation of the generator and solve or calculate simple tasks in the field.	4 h
	13.	Electromotor	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the midterm, written and oral exam they can define, describe, draw and sketch the principle of operation of electric motors and solve or calculate simple tasks in the field.	4 h

	14.	Basic electronic elements	2, 4	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the oral exam, they are able to define and describe the basic electronic elements.	2 h
	15.	Repetition / Colloquium	1, 2, 3, 4, 5	Students listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	It is necessary to identify, set and solve simple tasks from thematic units 10-13.	4 h

4. EVALUATION OF STUDENT WORK						
3.1. Student 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%. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	1	Written exam	1	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1	Seminar paper		(other)	
	Teaching activities		The oral part of exam	1	(other)	
3.3. Student work-load	-					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.

	Terminology, writing style	Words and expressions are not 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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
4.3. Forming the final grade according to the evaluation elements	Active attendance on class	0-69,9% attendance	70-79,9% attendance	80-89,9% attendance	90-100% attendance
		0 points	5 points	7 points	10 points
	Colloquiums x2	2	3	4	5
		16 points	20 points	26 points	30 points
	Written part of exam	2	3	4	5

		50 - 64,9%	65 - 79,9%	80 - 89,9%	90 - 100%
		15 points	20 points	25 points	30 points
	Oral part of exam	2	3	4	5
		15 points	20 points	25 points	30 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Stanić,E. : "Osnove elektrotehnike", Školska knjiga, Zagreb	3	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Kulišić,P. : "Fizika 2", Školska knjiga, Zagreb Pinter,V. : "Osnove elektrotehnike 1 i 2", Tehnička knjiga, Zagreb		
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	140773
1.2. Course title	**TRAFFIC LOGISTIC**	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 (specialist, undergraduate, graduate)	Undergraduate professional 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	1st, 2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The goal is to get students on the basis of theoretical knowledge and case studies: ▪ learn about the elements of the logistics system, ▪ identify and overcome logistical processes and activities that are related to storage, transportation, and traffic, ▪ mastering the modern logistics concepts and strategies.		
2.2. Terms of course entry and required competences	Enrolled 2nd academic year, 4 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 for decision making. LO6: Analyze and present relevant facts from the traffic area required to reach conclusions. IU9: Evaluate and organize processes in the field of road transport and/or transport logistics. IU11: Identity, anticipate and propose solution technologies and techniques of road transport. LO12: Design a smaller transport process and critically evaluate it.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Define and differentiate basic terms and division in logistics, warehousing, and freight forwarding.	1, 2
	2. Analyze and extract information and communication technologies in transport logistics.	4, 2
	3. Select, evaluate and categorize services in the warehouse business.	3, 5
	4. Compare and connect ways of transportation of products, organization of distribution and performance of city logistics.	4, 6
	5. Propose ways of doing urban logistics, handling of products and reduction of inventory costs.	6
	6. Use materials and tools to search the scientific and professional literature in their native and English languages.	3
	7. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introductory presentation (introducing students to the course content and obligations)	-	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	-	**2 h**
2.	The term of logistics (term, developmental factors, elements	**1, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually	At the colloquium or the written and oral exam, students know how	**4 h**

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

				and the discussion method on the topic are applied.	rules and methods for storing goods. Seminar paper created and presented (by computer programs).	
	5.	Warehousing and storage of products (video films)	**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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can distinguish, describe and present the warehouse equipment. Choose adequate racks and forklifts for the storage of products and internal transport. Seminar paper created and presented (by computer programs).	**6 h**
	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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the 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).	**6 h**
	7.	Information and communication system in the function of logistics (elements, methods of communication, modern	**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	At the colloquium or the written and oral exam, students can distinguish between information and communication technologies	**6 h**

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

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

		system, distribution networks, costs in distribution, term of the order, processes in ordering)		content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	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. 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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the concept and the goal of city logistics. Distinguish and isolate participants in city logistics. Categorize flows of products in city logistics. Identify means of transport. Suggest city logistics concepts. Identify the advantages and disadvantages of optimizing the flow of products. Seminar paper created and presented (by computer programs).	**6 h**
	14.	Study trip to LIDL Logistics-distribution center (located in Perušić).	**1, 3, 4, 5**		On a study tour, students will be able to define and differentiate basic terms and divisions in logistics, warehousing, and freight forwarding. Select, evaluate and categorize services in the warehouse business. Compare and	**8 h**

					connect modes of product transport, organization of distribution of products. Suggest ways of manipulation with the products and reducing inventory costs.	
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	**40 h**

3. EVALUATION OF STUDENT WORK						
3.1. Student 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	1	Written exam	1 (without colloqiums)	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
	Teaching activities	1	The oral part of exam	0,5	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as attendance (60 hours), preparation of seminar work and presentation (16 hours), preparation for the midterm/exam through self-study (44 hours).					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.
	Terminolog, writing style	Words and expressions are not 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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
	Active attendance on class	70-75% attendance	76-86% attendance	87-100% attendance	Mental map created, Case studies resolved

4.3. Forming the final grade according to the evaluation elements		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
	Oral part of exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding and Logistics Processes, Faculty of Transportation Sciences, University of Zagreb, Zagreb, 2010 (selected chapters)	-	City of Sibenik library
	Mlinarić Josip T.: Freight-transport Centers, Faculty of Transportation Sciences, University of Zagreb, 2013 (selected chapters)	-	PDF (Internet website)
	Zelenika R.: Logistics Systems, University of Rijeka, Faculty of Economics, Rijeka, 2005 (selected chapters)	2	
	Bloomberg D.: Logistics, MATE, Zagreb School of Economics and Management, Zagreb, 2006 (selected chapters)	-	City of Sibenik library

5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of Sibenik for the mentioned course. Zelenika R.: Transport Systems, University of Rijeka, Faculty of Economics, Rijeka, 2001. Zelenika R.: Transport and freight forwarding business, University of Rijeka, Faculty of Economics, Rijeka, 2001. Logistics www.logistika.com.hr		e-learning system City of Sibenik library City of Sibenik library Internet website
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	187599
1.2. Course title	**ENGLISH LANGUAGE II**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	Assistant	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	1.11. Level of e- learning application (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)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	1st	1.13. Modernization	Yes
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □
2. COURSE DESCRIPTION			
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	Completed course English language I		

VELEUČILIŠTE u ŠIBENIKU

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

Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering, 2- understanding, 3- application, 4-analysis, 5-evaluation, 6-synthesis*
1. to understand and apply basic terms from the professional terminology of English road traffic in English	2, 3
2. to apply grammatical structures in texts and assignments	3
3. to interpret and use tenses in real-life context	3, 4
4. to develop an essay within the topics of the course	5, 6
5. to present own ideas for development of traffic problems	3
6. to communicate in a foreign language within the subjects of the course, to express one own opinions	6
7. to compare and evaluate different traffic solutions	5
8. to analyse medium complex texts and solve tasks	4
9. to use part of the general language competency at levels B1	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-	2 h
2.	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 oral exams the applied grammatical structures on texts and tasks are evaluated, understand, apply	4 h

					and link terms from the professional terminology of English 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.	
	3.	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
	4.	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	4 h

					solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	5.	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 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
	6.	RAIL TRAFFIC IN EUROPE – Expressing habit	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	4 h

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

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

	11.	Steam engine cars – Future tenses	1, 2, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, 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
	12.	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

	13.	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
	14.	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

	15.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions 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 Polytechnic of Šibenik and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
3.2. Monitoring student work (enter the share of ECTS credits for each	Attendance	0,5	Written exam	1 (without colloquia)	Project	
	Experimental work		Research		Practical work	

activity so that the total number of ECTS points corresponds to the credit score of the course)	Essay		Report		Continuous examination	
	Colloquium	1 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	1	Other	
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 1. Attending classes and exercises 45 hours 2. Preparing colloquia or exams through individual work 45 hours					
4. GRADING SYSTEM						
4.1. Grading seminar papers	-					

4.2. Grading colloquia/ written and oral exam	**Unsatisfactory**	**Satisfactory**	**Above average**
	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 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.

4.3. Final grade according to evaluation elements						
	Active course attendance	70-75% of attendance	76-86% of attendance	87-100% of attendance		Maksim
		3 points	7 points	20 points		20
	Seminar paper					
	Colloquia/ Written exam	2	3	4		
		50-64,9%	65-79,9%	80-89,9%		90-
		25 points	30 points	35 points		40
	Oral exam	2	3	4		

		25 points	30 points	35 points	40

4.3. Final grade according to absolute division

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (satisfactory)	D
50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Katja Bošković Gazdović: "English textbook of Transport I",Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	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“, Veleučilište u Rijeci, Prometni odjel, 2007. 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 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	10	X (elearning, handouts)
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey,		

	monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the 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).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Luka Olivari	1.8. Course code in ISVU	187600
1.2 Course title	**TECHNICAL MECHANICS**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45+45+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	1st	1.13. Modernization	Yes
1.7. Credit score (ECTS)	8	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 and practical examples: ▪ to introduce into the professional and scientific content of technical mechanics (statics, kinematics and dynamics); ▪ master the application of the acquired knowledge for solving practical tasks in the field of transport; ▪ adopts approaches, methods and procedures of mechanics for the application in 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	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic LO8: To solve problems in traffic by using analytical and / or graphical methods		
	Learning outcomes by Bloom: (maximum 2 werbs for LO)		**Level of LO**: *1 - memory,*

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)		*2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Define and explain basic concepts in technical mechanics.	1, 2
	2. Explain and analyze the axioms of solid state statics and physical laws and phenomena in the field of mechanics.	2, 4
	3. Apply and analyze equilibrium equations for a rigid body.	3, 4
	4. Evaluate the consequences of the action of a system of forces and / or static moment using graphical and analytical methods.	5
	5. Sketch the diagrams of internal forces and moments for straight solid beam	4
	6. Identify the type of motion of a particle or solid and solve numerical problems in the field of kinematics.	4, 4
	7. Analyze and sketch kinematic diagrams of the motion of a particle or solid.	4, 4
	8. Select physical laws and principles that describe the problem, and use them to solve numerical problems in the dynamics of particles and solids.	5, 4

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introductory presentation (introducing students to the content and obligations of the course). Field of study and division of technical mechanics. Basic concepts, physical quantities and units of technical mechanics.	**1**	Listen to a lecture. By working independently on a computer, they are introduced to the course content, writing a seminar paper and documents on the e-learning page of the course. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic terms, physical quantities and units of measurement.	**6 h**

	2.	Laws and axioms of statics. A system of forces, coupling forces and torques.	**1, 2, 4**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to define, explain and analyze the axioms of solid state statics and physical laws in the field of mechanics; solve numerical tasks from the specified area; evaluate the consequences of the action of a system of forces and / or static moment using graphical and analytical methods.	**6 h**
	3.	Equilibrium and equilibrium conditions. Graphic equilibrium conditions.	**1, 3, 4**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	Apply and analyze equilibrium equations for a rigorous or written and oral exam, evaluate the consequences of the action of a system of forces and / or static moment using graphical and analytical methods, solve numerical problems in the specified field.	**6 h**
	4.	The center of gravity of a rigid body. Friction	**1, 3**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know how to define, explain the center of gravity and calculate the coordinates of the center of gravity of the rigid body; define and explain friction, analyze the impact of friction; solve numerical tasks from the specified area.	**6 h**

	5.	Straight full beam, diagrams of internal forces and moments.	**3, 4, 5**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	They can apply and analyze the equations of equilibrium for a straight full carrier, evaluate the consequences of the action of a force system, sketch diagrams of internal forces and moments at a colloquium or a written and oral exam.	**6 h**
	6.	Introduction to particle and solid body kinematics.	**1, 6, 7**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam they can define and explain the basic concepts in kinematics, identify the type of motion of a particle or solid, solve numerical problems in the field of kinematics.	**6 h**
	7.	Straight motion, kinematic diagrams	**1, 6, 7**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam they can define and explain the basic concepts in kinematics, identify the type of motion of a particle or solid, solve numerical problems in the field of kinematics.	**6 h**
	8.	Variable linear motion, harmonic motion	**1, 6, 7**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they can define and explain the basic concepts in kinematics, identify the type of motion of a particle or solid, solve numerical problems in the field of kinematics.	**6 h**

	9.	Curvilinear movement, circular motion.	**1, 6, 7**	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 they can define and explain the basic concepts in kinematics, identify the type of motion of a particle or solid, solve numerical problems in the field of kinematics.	**6 h**
	10.	An introduction to particle and solid body dynamics.	**1, 2, 4, 6, 8**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam they can define and explain basic concepts in dynamics, explain and analyze physical laws in the field of mechanics, evaluate the consequences of the action of forces and moments, identify the type of motion of a particle or solid, select physical laws and principles, and use them solve numerical tasks in the field of dynamics.	**6 h**
	11.	D'Alembert principle, mechanical work and power	**1, 2, 4, 6, 8**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam they can define and explain basic concepts in dynamics, explain and analyze physical laws in the field of mechanics, evaluate the consequences of the action of forces and moments, identify the type of motion of a particle or solid, select physical laws and	**6 h**

					principles, and use them solve numerical tasks in the field of dynamics.	
	12.	Mechanical energy, the law of conservation of mechanical energy	**1, 2, 4, 6, 8**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam they can define and explain basic concepts in dynamics, explain and analyze physical laws in the field of mechanics, evaluate the consequences of the action of forces and moments, identify the type of motion of a particle or solid, select physical laws and principles, and use them solve numerical tasks in the field of dynamics.	**6 h**
	13.	Force impulse, quantity of motion, law of quantity of motion, law of conservation of quantity of motion, collisions	**1, 2, 4, 6, 8**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or written and oral exam they can define and explain basic concepts in dynamics, explain and analyze physical laws in the field of mechanics, evaluate the consequences of the action of forces and moments, identify the type of motion of a particle or solid, select physical laws and principles, and use them solve numerical tasks in the field of dynamics.	**6 h**

	14.	Dynamic moment of inertia, rigid body rotation	**1, 2, 4, 6, 8**	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 written and oral exam they can define and explain basic concepts in dynamics, explain and analyze physical laws in the field of mechanics, evaluate the consequences of the action of forces and moments, identify the type of motion of a particle or solid, select physical laws and principles, and use them solve numerical tasks in the field of dynamics.	**6 h**
	15.	Final consideration		Listen to a lecture and read literature. Prepare individually for the exam.	-	**6 h**

3. EVALUATION OF STUDENT 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. Full-time students are required to attend a minimum of 70% of classes by the day of the colloquium, and to earn a minimum of 25% of the points at the previous colloquiums in order to qualify for the next colloquium. Students can take the final exam in the course in two ways: a) during the course, by taking three colloquiums and oral part of the exam; b) passing the written and oral part of the exam.					
3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	3	Written exam	3 (without colloquiums)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous check	
	Colloquiums	3 (without written exam)	Seminar paper		Field works or Study trips	
	Teaching activities		The oral part of exam	2	(other)	

<table>
<tr><td>3.3. Student work-load</td><td>Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), preparation of seminar work and presentation (30 hours).
<table>
<tr><th>Obligation</th><th>Hours (estimated)</th></tr>
<tr><td>1. Attending classes</td><td>90</td></tr>
<tr><td>2. Colloquiums and written exam individual preparation</td><td>90</td></tr>
<tr><td>3. Oral exam individual preparation</td><td>60</td></tr>
</table></td></tr>
<tr><td colspan="2">4. FORMATION OF STUDENT GRADE</td></tr>
</table>

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

		apply or explain the contents of the course with examples.	supports them with examples. Knows the expert terminology.	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.

4.3. Forming the final grade according to the evaluation elements					
	Colloquiums/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova
	The oral part of exem	2	3	4	5
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

5.1. Compulsory literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	mr.sc. Srećko Đuranović, dipl. ing: Udžbenik iz Tehničke mehanike, izdanje VUŠ, Šibenik 2015.	-	on-line (e-learning)

5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course Technical Mechanics. 2. Jurum Kipke, J.: Mehanika u prometnom inženjerstvu, Fakultet prometnih znanosti, Zagreb, 2001. 3. Jurum Kipke, J., Wolf, H., Muftić O.: Mehanika u prometu, Udžbenik Sveučilišta u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2009. 4. Jecić S., Mehanika (kinematika i dinamika), Tehnička knjiga, Zagreb, 1989.	- - 5 2	on-line (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 course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Title	**TRAFFIC AND ECOLOGY**	1.8. ISVU course code	201135
1.2. Lecturer	Tanja Radić Lakoš	1.9. MOZVAG course code	
1.3. Assistants and/or associates	None	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	Professional Undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Study year	1st	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 is that student, based on theoretical knowledge and case studies, be able to: • Define basic ecological and environmental concepts; • Understand problems in their own environment (in traffic and / or in the work environment) to independently manage the environment in a way that minimally affects the state and components of the environment in terms of sustainable development; • Learn to identify the damage that traffic or traffic system participants 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 high school education completed; having a qualification at level 4.2
	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	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.	
2.4. Expected learning outcomes on the course level	**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. 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. to analyze and compare the relationship between man and his environment in the historical and contemporary context of traffic and traffic techniques development,	4, 2
	3. It will also provide an example of road traffic impacts on natural ecosystems and parts of the environment (air, water and sea, soil, flora and fauna) and	2, 3
	4. Give an example of measures how to reduce negative impacts of traffic on the environment,	3
	5. Discuss and critically evaluate on the activity of traffic participants as well as traffic experts in accordance with the principles of sustainability and accountability,	4, 5
	6. Use materials and tools to search scientific and professional literature in Croatian and in English,	3
	7. Present accepted knowledge, ideas, problems and solutions independently and in the team.	6

2.5. Course content according to detailed curriculum schedule	**Constructive alignment**					
	No:	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**

		Introduction to the course and a detailed performance plan	-	Listen to the lecture. On seminary teaching, by independent work on the computer students get acquainted with course content and documents on the e-learning course page.	-	2 h
	1.	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
	2.	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
	3.	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	4 h

					members of the nutrition chain, and distinguish organisms with regard to the trophy.	
	4.	Pollution and degradation of the environment. Traffic caused Environmental Degradation.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar student individually, in pairs or Socrates threes made mental map and solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In a colloquy or written and oral exam students can define what environmental degradation is and how it comes to it, give an example of environmental degradation, analyse and conclude how environmental degradation occurs and compare how traffic causes degradation of the environment. Created mental map. Solved case study.	10 h
	5.	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	10 h

					seminar paper (by independent use of computer programs).	
	6.	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
	7.	View of mitigation and / or rehabilitation measures. The role of catalyser and λ-probe. Alternative fuels in road traffic.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam they can define and describe the material, role and mode of catalyser and λ probes, enumerate and describe alternative fuels in road traffic, choose the most environmentally friendly and interpret the choice, analyse the use of vehicles with ICE in the contemporary context of technology development and science. Created and Presented seminar paper (by independent use of computer programs).	10 h
	8.	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	In a colloquy or written and oral exam they can define and describe the types of fossil fuels and RES and	4 h

				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.	choose and comment on the most environmentally acceptable solution. Created and Presented seminar paper (by independent use of computer programs).	
	9.	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
	10.	Pollution and degradation of water in road traffic. View of mitigation and / or rehabilitation measures.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. At the seminar, students solve the case study.	In a colloquy or written and oral exam students can define and describe the basic concepts of pollution and degradation of water, to enumerate and distinguish natural and anthropogenic sources of water	8 h

					pollution, to predict the dynamics of water pollution along roads and to propose mitigation and / or rehabilitation measures. Solved case study.	
	11.	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
	12.	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	1

					of it. Created and Presented seminar paper (by independent use of computer programs).	
	13.	Noise and vibration in road traffic.	1, 2, 3, 4, 5, 6, 7	Listen to the lecture and read the literature. Listen to the lecture and read the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam students can define and describe the underlying concepts of noise pollution, enumerate road noise sources, predict the effects of noise on human health and propose measures to reduce noise in and out of the vehicle. Created and Presented seminar paper (by independent use of computer programs).	6 h
	14.	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
	15.	Concluding Considerations / Repeating and Preparing for Exam.		Listen to the lecture and individual preparation for the exam.	-	20 h
3. EVALUATION OF STUDENT WORK						

<table>
<tr><td>3.1. Students` obligations</td><td colspan="6">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 F (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 FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period;
• 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 case studies, making and presenting the seminar paper and passing two colloquia); b) during the course (active participation in the lessons, creating mental map, solving case studies, creating and presenting the seminar paper) and passing the exam (written and oral exam).</td></tr>
<tr><td rowspan="6">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)</td><td>Attendance</td><td></td><td>Written exam</td><td>2 (by submitting both colloquiums the student is relieved of an written examination)</td><td>Project</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>Research</td><td></td><td>Practical work</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Report</td><td></td><td>Continuous examination</td><td></td></tr>
<tr><td>Colloquium</td><td>3 (by submitting both colloquiums the student is relieved of a written and oral examination)</td><td>Seminar paper</td><td>0,5</td><td>Other (inscribe)</td><td></td></tr>
<tr><td>Class activities</td><td>0,5</td><td>Oral exam</td><td>1 (by submitting both colloquiums</td><td>Other (inscribe)</td><td></td></tr>
</table>

				the student is relieved of an oral examination)		

3.3. Student workload

The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:

	Commitment	***Hours (estimate)***
1.	Attending classes	45
2.	Creating and Presenting seminar paper	10
3.	Preparation for the Colloquium / exam through self-study	65

4. GRADING

4.1. Seminar paper grading

Valuation Element	**Poor**	**Satisfying**	**Above average**
Organization	The paper is not organized in a logical order and its structure is lacking.	The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion.	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another
Terminology, writing style	Words and phrases are low harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent and repeated grammatical mistakes.	Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.	Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
Quoting and referencing	Sources are not specified at all. The references do not match the topic and show a superficial approach to the research topic.	Sources are listed, but incomplete and with errors. The references are appropriate for the subject and show a satisfactory research attitude.	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

Poor	**Satisfying**	**Above average**

	Give answer by memory, no deeper understanding. Does not know and does not apply the basic terms and concepts. Cannot apply or explain the contents of the course.	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and thoroughly explains the content of the subject, and logically links and explains the terms and concepts that it encapsulates. Find solutions that are not originally given. There is a correlation with correlative subjects.

4.3. Creating a final grade according to evaluation elements					
	Active participation in the lessons	70-75% of attendance	76-86% of attendance	87-100% of attendance	Created mental map. Solved case study.
		2 points	4 points	7 points	3 points
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Colloquium / written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Creating a final grade according to absolute allocation		
Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (sufficient)	D
50 – 59,9%	2 (sufficient)	E

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)	1. European Parliament and Council of the European Union: "White Paper - A Single European Transport Space Platoon - A Road to a Comprehensive Transport System Resourcefully Managing Resources", COM (2011) 144final, 2011		Available On-line
	2. Golubić, J., Promet i okoliš, FPZ, Zagreb, 1999.	5	Available On-line
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Radić Lakoš, T., Upravljanje okolišem, VUŠ, Šibenik, 2018. (selected chapters) 2. Glavač, V., Uvod u globalnu ekologiju, Hrvatska sveučilišna naklada, Zagreb, 2001. 3. Udovičić, B., Čovjek i okoliš, Kigen, Zagreb, 2009.	 5 2	Available On-line
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. 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 Polytechnic. 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).		

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Srećko Đuranović, Ernest Bazijanac	1.8. Course code in ISVU	187601
1.2 Course title	**INTRODUCTION TO MECHANICAL ENGINEERING**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	Luka Olivari	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45+45+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (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 aim of the course is to provide students with theoretical knowledge and practical examples: ▪ to introduce into the professional and scientific content of mechanical engineering; ▪ master the application of the acquired knowledge for solving practical tasks in the field of transport; ▪ adopts approaches, methods and procedures of mechanical engineering for solving 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 economic terms in more complex written and oral communication in Croatian and foreign languages LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic LO8: To solve problems in traffic by using analytical and / or graphical methods		
	Learning outcomes by Bloom: (maximum 2 werbs for LO)		**Level of LO**:

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)		*1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Define and explain basic concepts in mechanical engineering.	1, 2
	2. Analyze and calculate heat conduction and thermal expansion of the material.	4, 4
	3. Explain and comment on material characteristics and properties, and procedures for testing material properties.	2, 4
	4. Distinguish between basic machine elements, coupling elements, and power and motion transmission elements.	4
	5. Analyze and evaluate the stress of the material and the deformation due to load on the example.	4, 5
	6. Sizing machine elements based on sizing criteria.	5
	7. Calculate gear ratio and power losses for complex power and motion transmitters.	4, 4
	8. Formulate expressions for determining traction and vehicle resistance.	6

2.5. Course content according to detailed curriculum schedule	**Constructive allignement**					
	No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	Introductory presentation (introducing students to the content and obligations of the course). Introduction to mechanical engineering, determining the shape and dimensions of machine parts, selection of materials	**1**	Listen to a lecture. By working independently on a computer, they are introduced to the course content, writing a seminar paper and documents on the e-learning page of the course. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts from the basics of mechanical engineering.	**6 h**

	2.	Material structure, Properties of metals and alloys	**1, 3**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; solve numerical tasks from the specified area.the action of a system of forces and / or static moment using graphical and analytical methods.	**6 h**
	3.	Chemical properties of materials, Thermal properties of materials, Mechanical properties of materials	**1, 2, 3**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to analyze and calculate the heat conduction and thermal stretching of the material; explain and comment on material characteristics and properties, and material testing procedures; solve numerical tasks from the specified area.	**6 h**
	4.	Types of load and strain.	**1, 3, 5**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; analyze and evaluate the stress of the material and the deformation due to loading; solve numerical tasks from the specified area.	**6 h**

	5.	Fundamentals of testing the mechanical properties of materials, Diagram σ-ε, Permissible stress and safety factor	**1, 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 they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; analyze and evaluate the stress of the material and the deformation due to loading; to dimension machine elements based on sizing criteria; solve numerical tasks from the specified area.	**6 h**
	6.	Stress Concentration, Torque Moments, Hardness and Hardness Testing	**1, 3, 5**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; analyze and evaluate the stress of the material and the deformation due to loading; solve numerical tasks from the specified area.	**6 h**
	7.	Creep and creep test, Toughness and toughness test.	**1, 3, 5**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam, they are able to: explain and comment on the characteristics and properties of the material and the procedures for examining the material; analyze and evaluate the stress of the material and the deformation due to loading; solve	**6 h**

					numerical tasks from the specified area.	
	8.	Machine elements: rivets, welds	**1, 4, 5, 6**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to distinguish between the basic elements of machines, the elements for coupling, and the elements for the transmission of power and motion; analyze and evaluate the stress of the material and the deformation due to loading; solve numerical tasks from the specified area.	**6 h**
	9.	Machine Elements: Solder Joints, Screw Joints, Clamp Joints	**1, 4, 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 they know: to distinguish between the basic elements of machines, the elements for coupling, and the elements for the transmission of power and motion; analyze and evaluate the stress of the material and the deformation due to loading; solve numerical tasks from the specified area.	**6 h**
	10.	Machine Elements: Pins, Bolts, Springs.	**1, 4, 5, 6**	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to distinguish between the basic elements of machines, the elements for coupling, and the elements for the transmission of power and motion; analyze and evaluate the stress of the material and the deformation due to loading; solve	**6 h**

					numerical tasks from the specified area.	
	11.	Machine Elements: Shafts and Shafts, Bearings, Couplings	**1, 4, 5, 6, 7**	They listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to distinguish between the basic elements of machines, the elements for coupling, and the elements for the transmission of power and motion; analyze and evaluate the stress of the material and the deformation due to loading; calculate the transmission ratio and power losses of complex power and motion transmitters; solve numerical tasks from the specified area.	**6 h**
	12.	Machine Elements: Power Transmissions, Gears	**1, 4, 5, 6, 7**	They listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to distinguish between the basic elements of machines, the elements for coupling, and the elements for the transmission of power and motion; analyze and evaluate the stress of the material and the deformation due to loading; calculate the transmission ratio and power losses of complex power and motion transmitters; solve numerical tasks from the specified area.	**6 h**
	13.	Machine Elements: Belt drive, Friction drive, Chain drive.	**1, 4, 5, 6, 7**	They listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they know: to distinguish between the basic elements of machines, the elements for coupling,	**6 h**

					and the elements for the transmission of power and motion; analyze and evaluate the stress of the material and the deformation due to loading; calculate the transmission ratio and power losses of complex power and motion transmitters; solve numerical tasks from the specified area.	
	14.	Vehicle movement equation, Vehicle movement resistance force, traction force	**1, 8**	They 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 they can: define and explain the basic concepts from the basics of mechanical engineering; formulate terms to determine the traction force and the resistance of the vehicle; solve numerical tasks from the specified area.	**6 h**
	15.	Final consideration	**-**	Listen to a lecture and read literature. Prepare individually for the exam.	-	**6 h**

3. EVALUATION OF STUDENT 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. Full-time students are required to attend a minimum of 70% of classes by the day of the colloquium, and to earn a minimum of 25% of the points at the previous colloquiums in order to qualify for the next colloquium. Students can take the final exam in the course in two ways: a) during the course, by taking three colloquiums and oral part of the exam; b) passing the written and oral part of the exam.					
3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the	Attending classes	3	Written exam	2 (without colloquiums)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous check	

total number of ECTS credits corresponds to the course credit value)	Colloquiums	2 (without written exam)	Seminar paper		Field works or Study trips	
	Teaching activities		The oral part of exam	1	(other)	

3.3. Student work-load

Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), preparation of seminar work and presentation (30 hours).

	Obligation	***Hours (estimated)***
1.	Attending classes	90
2.	Colloquiums and written exam individual preparation	60
3.	Oral exam individual preparation	30

4. FORMATION OF STUDENT GRADE

4.1. Evaluation of written exam

Elements of evaluation	**Bad**	**Satisfying**	**Above average**
Physical quantities and their units of measurement	Nonstandard physical units have not been converted to basic or have been converted wrong.	Nonstandard units have been converted to basic units with minor errors in calculation.	Nonstandard units have been converted to base units without error.
Structure, traceability, legibility and orderliness of the procedure, diagrams and sketches	The task is not properly structured, it is not traceable, and it is not readable. Diagrams and sketches are non-existent, inaccurate, messy, unclear and ambiguous.	The task is satisfactorily structured, traceable and readable. The diagrams and sketches are meaningful, neat with minor errors.	The task is clearly structured, complete, very neat and legible. The diagrams are completely accurate, clear and very neat.
Application of appropriate equation (formulas) and the final result.	Uses expressions that do not describe the problem specified, or incorrectly expresses the physical unit from the expression. Numeric values are not included in the expression. The end result is incorrect.	Uses expressions that describe the problem in question, accurately derives physical quantities from the expression, incorporates numerical values into the expression with smaller numbers, the final result has smaller deviations from the exact result.	Uses expressions that describe the problem in question, accurately derives physical quantities from expressions, lists units of measure without errors, the final result is completely accurate.

4.2. Evaluation of oral exam	Knowledge and expression.	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supports them with examples. Knows the expert terminology.	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles of physical laws, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts and supports them with examples. Finds solutions that were not originally given. It notes correlations with related material. Fluent in professional terminology.

4.3. Forming the final grade according to the evaluation elements	Colloquiums/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova
	The oral part of exem	2	3	4	5
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

5.1. Compulsory literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	mr.sc. Srećko Đuranović, dipl. ing: udžbenik iz Osnova strojarstva, izdanje VUS, Šibenik 2016.	-	on-line (e-learning)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course Introduction to Mechanical Engineering. 2. Vrhovski,D., Nikšić.M.: Strojarstvo. Zbirka riješenih zadataka, Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2005. 3. Perše, S., Višnjić.V.: Strojarstvo u prometu, Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2005.	- 5 2	on-line (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 course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	TRANSSHIPMENT RESOURCES I	1.8. Course code at ISVU	187602
1.2. Course lecturer	**Ana-Mari Poljičak**	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+30+30+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Year of study	2nd	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: • 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.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.
2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.

	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.	
2.4. Expected learning outcomes on the course level	**Learning outcomes according to Bloom's taxonomy:**	**Level of LO**: *1 - memory,* *2 - understanding,* *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 technical characteristics of the goods,	1
	2. to sketch and comment on continuous operation transhipments,	3, 4
	3. calculate the productivity of individual continuous-action transhipment means,	4
	4. recommend loading and unloading means depending on the type of goods and productivity.	5

	Constructive allignement					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
2.5. Course content according to detailed curriculum schedule	1.	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
		Basics of transverse mechanization.	1	Listen to lectures and read literature. In seminar classes, they are introduced to the methodology of writing seminar papers.	At the colloquium or the written and oral exam they indicate the types of transhipment according to the degree of	7 h

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

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

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

				paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	Seminar paper created (presented by computer programs). They know how to calculate the productivity of sectional conveyors.	
	10.	Vibrating conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or the written and oral exam they can state the characteristics of oscillatory conveyors, explain their working principle and sketch them. Seminar paper created (presented by computer programs). They know how to calculate the productivity of vibrating conveyors.	9 h
	11.	Vibrating conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this thematic area by searching the database, and on the basis of it and the read literature, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. In the exercise classes, they calculate the productivity of the conveyor by analytical methods.	The colloquium or written and oral exam knows specify characteristics of vibratory conveyors, to explain their working principle and sketch them. Seminar paper created (presented by computer programs). They know how to calculate the productivity of vibrating conveyors.	9 h
	12.	Gravity conveyors.	2, 3, 4	They listen to a lecture and read literature. At the seminar teaching, they individually	At the colloquium or the written and oral exam they can define gravity	8 h

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

				classes, they calculate the productivity of the conveyor by analytical methods.		
	15.	Concluding considerations. Repeating and preparing for the exam.		They listen to a lecture and prepare individually for the exam.	-	32 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year;
- From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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 colloquium); b) during class (active participation in class and passing exams (written and oral part of the exam).

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		Written exam	3 (without colloquia)	Project	
Experimental work		Research		Practical work	
Essay		Report		Continuous examination	1
Colloquium	3 (without written exam)	Seminar paper	0,5	Other	
Class activity	0,5	Oral exam	1(without colloquia)	Other	

3.3. Student workload

Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:

Obligation	***Hours (estimated)***
1. Active class attendance	90

	2. Preparing colloquia or exams through individual work	60

4. FORMATION OF GRADES

4.1. Grading of seminar work

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.
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.

4.2. Grading of the colloguium / written and oral exam

Bad	Satisfying	Above average

	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements					
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		2 points	4 points	7 points	10 points
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral part of the exam	2	3	4	5
		25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution		
Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (sufficient)	D
50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media

5.1. Required literature (available in the library and through other media)	1. Mavrin I. : Transporteri, Fpz, Zagreb, 1999.	-	
	2. Bognolo, D., Kršulja, M.: Prekrcajna sredstva, Zbirka riješenih zadataka, Veleučilište u Rijeci, Rijeka 2017. (selected chapters)	3	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Ljubetić J. : Prekrcajna sredstva s neprekidnim djelovanjem – Zbirka slika i tablica, Rijeka, 2002. 2. Šćap D.: Prenosila i dizala, FSB, Zagreb, 2004.	- -	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 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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	**INTERNAL TRANSPORT AND STORAGE**	1.8. Course code at ISVU	140768
1.2. Course lecturer	Ana-Mari Poljičak	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+30+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st- some of the material available Online, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Year of study	2nd	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 and case studies: • Define the basic concepts of internal transport and storage; • Understand the characteristics of internal transport and storage; • Apply the learned content of this course in the storage and production system.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.
2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.

2.4. Expected learning outcomes on the course level	**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.*
	1. demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts in the internal transport and storage,	1, 1
	2. distinguish and choose types of warehouses, equipment and means of internal transport and storage according to the type of goods,	2, 5
	3. comment on goods flows and processes in the internal transport and storage,	4
	4. examine the storage capacity and utilization,	4
	5. distinguish between business benchmarks and uts costs,	4
	6. use materials and tools to search scientific and professional literature in their native and English languages,	3
	7. present the acquired knowledge independently and in a team.	6

	Constructive allignement					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
2.5. Course content according to detailed curriculum schedule	1.	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
		The term, goal, structure and function of internal transport.	1, 6	They listen to a lecture and read literature. In the exercise classes, they	At the colloquium or written and oral exam define basic terms in the internal transport and storage.	7 h

				explain and comment on the necessary expressions for the calculations.		
	2.	Roads and material flows in internal transport and storage.	1, 3, 4	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At the colloquium or the written and oral exam they can explain the traffic junctions and internal roads and explain the flow of materials in production and public warehouses. They know how to define and describe the basic concepts for calculating storage capacity and utilization of storage space. Calculate the usable storage area.	7 h
	3.	Types, designs and purposes of the warehouse.	2, 4, 6	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At the colloquium or the written and oral exam they can list and describe the types of warehouses and choose the type of warehouse according to the type of goods. Calculate storage capacity.	10 h
	4.	Types, designs and purposes of the warehouse.	2, 4, 6	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At the colloquium or the written and oral exam they can list and describe the types of warehouses and choose the type of warehouse according to the type of goods. They know how to calculate the area and volume of a ground floor warehouse, as well as the area and free height of a storey floor at a storey warehouse.	10 h
	5.	Storage equipment.	1, 2, 4	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At the colloquium or the written and oral exam they can define what the warehouse equipment is, what it is used for and list the technical and technological	8 h

					equipment of the warehouse. Calculate the degree of free storage area.	
	6.	Field teaching PORT OF ŠIBENIK	3, 6, 7	They listen to a lecture. (Tour of warehouses and docks, transhipment machinery, monitoring of storage and transhipment processes from railway wagons, trucks and ships). The experiential and self-discovery methods are applied. In the practice classes, they create a project assignment that presents the acquired knowledge during professional visits. Brainstorming and discussion of technological processes and transshipment mechanization in the the internal transport and storage are used in the teaching of exercises, for example by expert visits.	At the colloquium or the written and oral exam they can describe and explain the inland transport and storage, as well as the equipment for transhipment and cargo control. Created and presented project assignment (using computer programs independently).	7 h
	7.	Field teaching Impol-TLM Šibenik	3, 6, 7	They listen to a lecture. (Tour of the factory and handling equipment. Introduction to technological process of production, storage and storage of finished products and equipment). The experiential and self-discovery methods are applied. In the practice classes, they create a project assignment that presents the acquired knowledge during professional visits. Brainstorming and discussion of technological processes and	At the colloquium or the written and oral exam they know how to describe and explain the internal transport and storage in production and the equipment and the way of controlling the quantity of goods. Created and presented project assignment (using computer programs independently).	7 h

				transshipment mechanization in the internal transport and storage are used in the teaching of exercises, for example by expert visits.		
	8.	Economics of internal transport and storage. Colloquium I.	1, 4, 5	They listen to a lecture and read literature.	At the colloquium or the written and oral exam they know how to define the basic concepts for measuring and monitoring the performance of the internal transport and storage business and the cost of internal transport and storage by origin.	9 h
	9.	Field teaching VINARIJA ŠIBENIK	3, 6, 7	They listen to a lecture. (Tour of the winery and warehouse. Monitoring of the wine production process and the transshipment machinery used in this process. Depalletizers in the production process. Monitoring of the process of preparing the goods for storage (palletizers) and the way the goods are stored in the warehouse). The experiential and self-discovery methods are applied. In the exercise classes, they create a project assignment. Brainstorming and discussion of technological processes and transshipment mechanization in the the internal transport and storage are used in the teaching of exercises, for example by expert visits.	At the colloquium or the written and oral exam they can explain the technological processes and equipment in production and storage. Created and presented project assignment (using computer programs independently).	7 h

	10.	Information and communication system of the internal transport and storage. Designing the performance, location and reconstruction of the warehouse. Technical process of storage.	1, 3, 4	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At colloquium or the written and oral exam they can define the information and communication system in internal transport and storage and specify its elements. State the positive effects of electronic communication in the internal transport and storage and explain the role of the information system in business decisions. They know how to define the concept of warehouse design and enumerate the key elements for designing the construction or renovation of a warehouse. State the principles of storage operations and storage procedures. They know how to calculate the capacity of one-time accommodation and the total storage area.	8 h
	11.	Means and tools for internal transport and storage.	1, 2, 4	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At the colloquium or the written and oral exam they know how to define, describe and differentiate the means of gripping, lifting, transferring, lowering and depositing loads. They know how to calculate the intensity of storage operations and the throughput of storage.	10 h
	12.	Means and tools for internal transport and storage.	1, 2, 4	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At the colloquium or written and oral exam knows define, describe and differentiate the means for internal carriage of goods and means of packing, unpacking and load control. They know	10 h

					how to calculate the number of forklifts required.	
	13.	Field teaching "MLINAR" factory in Šibenik	3, 6, 7	They listen to a lecture. (Introduction to automation of technological processes. Storage of raw materials and storage of finished products). The experiential and self-discovery methods are applied. In the practice classes, they create a project assignment that presents the acquired knowledge during professional visits. Brainstorming and discussion of technological processes and transshipment mechanization in the internal transport and storage are used in the teaching of exercises, for example by expert visits.	At the colloquium or the written and oral exam they know how to describe and explain internal transport and storage and the automation of production. Created and presented project assignment (using computer programs independently).	7 h
	14.	Design of internal transport and storage. Colloquium II.	2, 3, 4	They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks.	At colloquium or the written and oral exam they can enumerate and describe the activities in the design of uts in production and public warehouses, as well as enumerate methods of placing goods in the warehouse.	7 h
	15.	Concluding considerations. Repeating and preparing for the exam.		They listen to a lecture and prepare individually for the exam.	-	35 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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 and presentation of project assignment and two colloquiums); b) during class (active participation in class and preparation and presentation of project assignment) and passing exams (written and oral part of the exam).

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		Written exam	3 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	3 (without written exam)	Seminar paper		Project assignment	0,5
	Class activity	0,5	Oral exam	1	Other	

3.3. Student workload

Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:

Obligation	***Hours (estimated)***
1. Active class attendance	60
2. Designing a project assignment and presentation	20
3. Preparing colloquia or exams through individual work	70

4. FORMATION OF GRADES

4.1. Evaluation of a project assignment

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.
	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.

4.2. Grading of the colloguium / written and oral exam	**Bad**	**Satisfying**	**Above average**
	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements					
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		2 points	4 points	7 points	10 points
	Project assignment	2	3	4	5
		5 points	7 points	8 points	10 points
		2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%

	Examination / Written examination	25 points	30 points	35 points	40 points
	Oral part of the exam	2	3	4	5
		25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (sufficient)	D
50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Dundović Č., Hess S.: Unutarnji transport i skladištenje, PFR, Sveučilište u Rijeci, Rijeka, 2007.	3	
	2. Miloš I.: Unutarnji transport i skladištenje, Veleučilište u Rijeci, Rijeka, 2003.	1	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Prikril B., Božičević D.: Mehanizacija pretovara i skladištenja, FPZ, Zagreb, 1987.	6	
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 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).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Ivana Beljo	1.8. Course code in ISVU	140769
1.2. Course title	**OPERATIONAL RESEARCH IN TRAFFIC**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	Želimir Mikulić	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	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)	Obligatory	1.12. Number of course revisions	2
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	Getting acquainted with the various types of problems that arise in business decision making. Adopting knowledge and skills of the analytical way of thinking, and the logical way of concluding and interpreting the results in further education. The aim of the course is to familiarize and teach students how to use the methods in order to solve certain problems in business decision making and to use methods for optimizing such problems.		
2.2. Terms of course entry and required competences	4 year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO 1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English, LO 4: To apply knowledge from the field of natural and technical sciences to problems in road traffic, LO 7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process,		

<table>
<tr><td></td><td>LO 8: To solve problems in traffic by using analytical and / or graphical methods.</td></tr>
<tr><td>2.4. Expected learning outcomes on the course level</td><td>
<table>
<tr><td>Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)</td><td>Level of LO:
1- remembering,
2- understanding,
3- application,
4-analysis,
5-evaluation,
6-synthesis</td></tr>
<tr><td>1. to formulate the problem from practice as a suitable mathematical model</td><td>4</td></tr>
<tr><td>2. to solve optimization problem with graphical method</td><td>4</td></tr>
<tr><td>3. to apply computer tools for solving linear programming problem and to recommend optimal solution,</td><td>3, 5</td></tr>
<tr><td>4. to choose the appropriate algorithm and to solve network problems,</td><td>3, 4</td></tr>
<tr><td>5. to apply critical path method in the project management.</td><td>3, 4</td></tr>
</table>
</td></tr>
<tr><td>2.5. Course content according to detailed curriculum schedule</td><td>
Constructive allignement
<table>
<tr><th>no</th><th>Thematic unit</th><th>LO of the course</th><th>Content/teaching methods</th><th>Evaluation</th><th>Time</th></tr>
<tr><td>1.</td><td>Introduction into the course and detailed plan.</td><td>-</td><td>Listen to lectures. Work independently on computer, get to know course content and elearning documents.</td><td>-</td><td>2 h</td></tr>
<tr><td>2.</td><td>Linear Programming Problems</td><td>1,3</td><td>Listen to lectures and read literature. Work independently on a computer solve tasks.The exercises demonstrate how to solve tasks. Solve exercises.</td><td>In colloquium or written and oral exams students know how to model the problem of linear programming and to solve the problem of linear programming using the Solver and recommend the optimal solution.</td><td>4 h</td></tr>
<tr><td>3.</td><td>Linear Programming Problems. Graphical solution</td><td>1, 2</td><td>Listen to lectures and read literature. The exercises</td><td>In colloquium or written and oral exams students know how to model a linear</td><td>3 h</td></tr>
</table>
</td></tr>
</table>

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

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

VELEUČILIŠTE u ŠIBENIKU

<table>
<tr><td colspan="7">3. EVALUATION OF STUDENTS` WORK</td></tr>
<tr><td>3.1. Students` obligations</td><td colspan="6">In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list. Students who have during the course achieved:
• from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year;
• from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period;
• 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 colloquia); b) by passing the exam (written and oral part of the exam).</td></tr>
<tr><td rowspan="5">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)</td><td>Attendance</td><td>0,5</td><td>Written exam</td><td>2 (without colloquia)</td><td>Project</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>Research</td><td></td><td>Practical work</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Report</td><td></td><td>Continuous examination</td><td>0,5</td></tr>
<tr><td>Colloquium</td><td>2 (without written exam)</td><td>Seminar paper</td><td></td><td>Other</td><td></td></tr>
<tr><td>Class activity</td><td>0,5</td><td>Oral exam</td><td>0,5</td><td>Other</td><td></td></tr>
<tr><td>3.3. Student workload</td><td colspan="6">Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as:
1. Attending classes and exercises 45 hours
2. Preparing colloquia or exams through individual work 65 hours</td></tr>
<tr><td colspan="7">4. GRADING SYSTEM</td></tr>
<tr><td>4.1. Grading seminar papers</td><td colspan="6"></td></tr>
<tr><td>4.2. Grading colloquia/ written and oral exam</td><td colspan="6"><table><tr><th>Unsatisfactory</th><th>Satisfactory</th><th>Above average</th></tr></table></td></tr>
</table>

	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 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.

4.3. Final grade according to evaluation elements					
	Active course attendance	70-74,9% of attendance	75-79,9% of attendance	80-89,9% of attendance	90-100% of attendance
		2 points	5 points	10 points	20 points
	Colloquia/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.3. Final grade according to absolute division	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (satisfactory)	D
	50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

5.1. Compulsory literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Pašagić, H., Ivanković, B., Kapetanović, N., Matematičke metode u prometu, Zagreb, 2004. (selected chapters)	3	

	Lukač Z., Neralić L. :Operacijska istraživanja, Element 2013. (selected chapters)		
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Neralić, L., Uvod u matematičko programiranje 1, Zagreb, 2012. (selected chapters) Hillier F., Lieberman G. : Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed. (selected chapters)		
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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Name of the course	**ECONOMICS OF TRAFFIC**	1.8. ISVU course code	P-213
1.2. Lecturer	Dijana Mečev	1.9. MOZVAG course code	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	**Undergraduate professional 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	2nd	1.13. Modernization	□ yes X no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □

2. COURSE DESCRIPTION		
2.1. Course objectives	The main objective of the course is to provide students with the skills and abilities to understand main economic relationships and processes in the transport system.	
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.	
2.3. Learning outcomes 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. LO5: To apply basic legal and economic principles in organization with socially responsible management in technical-technological subjects.	
2.4. Expected learning outcomes on the course level	**Learning outcomes** towards Bloom's taxonomy: (up to two verbs per LO)	**LO Level:** *1. Recapture,* *2. Understanding,* *3. Application,*

		4. Analysis, *5. Evaluation, Synthesis*
	– To explain the basic features of transport economics and the transport market from a macro point of view – To explain the basic features of transport economics and the transport market from a micro point of view – To relate the incurrence of transport costs, prices of transport services and performance indicators of transport companies – To develop a seminar paper in which the business operations of the transport industry are elaborated	2 2 3 3

Constructive alignment

	no.	Thematic ensemble / Lecture Topic	Course LO	Content / Teaching Method	Evaluation	Time needed
2.5. Course content according to detailed curriculum schedule		Introduction into the course and detailed plan.	-	Listen to the lecture. By independent work on the computer students get acquainted with course content and documents on the e-learning course page.	-	1 h
	1.	Characteristics of transport economics and transport market.	1, 2	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams students can: define and describe the basic concepts of transport economics; explain the characteristics of the transport market; differentiate transport need from transport service; give examples of complementarity and competitiveness of the transport branches.	2 h
	2.	Economic sense and practical importance of transport division	1,2	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of	In colloquium or written and oral exams students can enumerate the main factors and criteria for the division of transport. They can explain how transport affects division of labor and specialization. They	4 h

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

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

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

				pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	competition. They are able to distinguish between perfect and monopolistic competition.	
	14.	Economic policy and the market.	2,5,6	Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues.	In colloquium or written and oral exams they can state and explain the most common measures of transport regulation.	3 h
	15.	Concluding Considerations / Repeating and Preparing for Exam.		Concluding Considerations / Repeating and Preparing for Exam.		30 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 colloquium seminar paper. Students who have during the course achieved: • From 0 – 24,9% ECTS credits- is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year; • From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; • 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 passing two colloquia); b) during the course (active participation in the lessons, solving case studies, creating and presenting the seminar paper) and passing the exam (written and oral exam).					

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		Written exam	2 (by submitting both colloquiums the student is relieved of an written examination)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	2 (by submitting both colloquiums the student is relieved of a written and oral examination)	Seminar paper	0,5		
	Class activities	0,5	Oral exam	1 (by submitting both colloquiums the student is relieved of an oral examination)		

3.3. Student workload

The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:

Commitment	***Hours (estimate)***
1. Attending classes	45
2. Creating and Presenting seminar paper	10
3. Preparation for the Colloquium / exam through self-study	35

4. GRADING

4.1. Seminar paper grading

Valuation Element	**Poor**	**Satisfying**	**Above average**
Organization	The paper is not organized in a logical order and its structure is lacking.	The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion.	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another

	Terminology, writing style	Words and phrases are low harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent and repeated grammatical mistakes.	Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.	Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
	Quoting and referencing	Sources are not specified at all. The references do not match the topic and show a superficial approach to the research topic.	Sources are listed, but incomplete and with errors. The references are appropriate for the subject and show a satisfactory research attitude.	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	**Poor**	**Satisfying**	**Above average**
	Give answer by memory, no deeper understanding. Does not know and does not apply the basic terms and concepts. Cannot apply or explain the contents of the course.	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and thoroughly explains the content of the subject, and logically links and explains the terms and concepts that it encapsulates. Find solutions that are not originally given. There is a correlation with correlative subjects.

4.3. Creating a final grade according to evaluation elements	Active participation in the lessons	70-75% of attendance	76-86% of attendance	87-100% of attendance	Solved case study.
		2 points	4 points	7 points	3 points
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Colloquium / written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%

		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Creating a final grade according to absolute allocation

Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (sufficient)	D
50 – 59,9%	2 (sufficient)	E

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)	1. Bukljaš Skočibušić M., Radačić Ž., Jurčević M. (2011). „Ekonomika prometa.“ Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb. (selected chapters) 2. Perić T., Radačić Ž., Šimulčik D. (2000). „Ekonomika prometnog sustava.“ Prometni fakultet Sveučilišta u Zagrebu, Zagreb. (selected chapters)	4 2	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Baričević, H. (2003). „Promet i turizam.“ VŠTM, Šibenik.	24	
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. 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 Polytechnic. 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).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	140773
1.2. Course title	**TRAFFIC LOGISTIC**	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 (specialist, undergraduate, graduate)	Undergraduate professional 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	1st, 2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The goal is to get students on the basis of theoretical knowledge and case studies: ▪ learn about the elements of the logistics system, ▪ identify and overcome logistical processes and activities that are related to storage, transportation, and traffic, ▪ mastering the modern logistics concepts and strategies.		
2.2. Terms of course entry and required competences	Enrolled 2nd academic year, 4 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 for decision making. LO6: Analyze and present relevant facts from the traffic area required to reach conclusions. IU9: Evaluate and organize processes in the field of road transport and/or transport logistics. IU11: Identity, anticipate and propose solution technologies and techniques of road transport. LO12: Design a smaller transport process and critically evaluate it.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Define and differentiate basic terms and division in logistics, warehousing, and freight forwarding.	1, 2
	2. Analyze and extract information and communication technologies in transport logistics.	4, 2
	3. Select, evaluate and categorize services in the warehouse business.	3, 5
	4. Compare and connect ways of transportation of products, organization of distribution and performance of city logistics.	4, 6
	5. Propose ways of doing urban logistics, handling of products and reduction of inventory costs.	6
	6. Use materials and tools to search the scientific and professional literature in their native and English languages.	3
	7. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introductory presentation (introducing students to the course content and obligations)	-	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	-	**2 h**
2.	The term of logistics (term, developmental factors, elements	**1, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually	At the colloquium or the written and oral exam, students know how	**4 h**

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

				and the discussion method on the topic are applied.	rules and methods for storing goods. Seminar paper created and presented (by computer programs).	
	5.	Warehousing and storage of products (video films)	**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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can distinguish, describe and present the warehouse equipment. Choose adequate racks and forklifts for the storage of products and internal transport. Seminar paper created and presented (by computer programs).	**6 h**
	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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the 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).	**6 h**
	7.	Information and communication system in the function of logistics (elements, methods of communication, modern	**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	At the colloquium or the written and oral exam, students can distinguish between information and communication technologies	**6 h**

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

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

		system, distribution networks, costs in distribution, term of the order, processes in ordering)		content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	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. 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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the concept and the goal of city logistics. Distinguish and isolate participants in city logistics. Categorize flows of products in city logistics. Identify means of transport. Suggest city logistics concepts. Identify the advantages and disadvantages of optimizing the flow of products. Seminar paper created and presented (by computer programs).	**6 h**
	14.	Study trip to LIDL Logistics-distribution center (located in Perušić).	**1, 3, 4, 5**		On a study tour, students will be able to define and differentiate basic terms and divisions in logistics, warehousing, and freight forwarding. Select, evaluate and categorize services in the warehouse business. Compare and	**8 h**

					connect modes of product transport, organization of distribution of products. Suggest ways of manipulation with the products and reducing inventory costs.	
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	**40 h**

3. EVALUATION OF STUDENT WORK						
3.1. Student 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	1	Written exam	1 (without colloqiums)	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
	Teaching activities	1	The oral part of exam	0,5	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as attendance (60 hours), preparation of seminar work and presentation (16 hours), preparation for the midterm/exam through self-study (44 hours).					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.
	Terminolog, writing style	Words and expressions are not 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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
	Active attendance on class	70-75% attendance	76-86% attendance	87-100% attendance	Mental map created, Case studies resolved

4.3. Forming the final grade according to the evaluation elements		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
	Oral part of exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding and Logistics Processes, Faculty of Transportation Sciences, University of Zagreb, Zagreb, 2010 (selected chapters)	-	City of Sibenik library
	Mlinarić Josip T.: Freight-transport Centers, Faculty of Transportation Sciences, University of Zagreb, 2013 (selected chapters)	-	PDF (Internet website)
	Zelenika R.: Logistics Systems, University of Rijeka, Faculty of Economics, Rijeka, 2005 (selected chapters)	2	
	Bloomberg D.: Logistics, MATE, Zagreb School of Economics and Management, Zagreb, 2006 (selected chapters)	-	City of Sibenik library

5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of Sibenik for the mentioned course. Zelenika R.: Transport Systems, University of Rijeka, Faculty of Economics, Rijeka, 2001. Zelenika R.: Transport and freight forwarding business, University of Rijeka, Faculty of Economics, Rijeka, 2001. Logistics www.logistika.com.hr		e-learning system City of Sibenik library City of Sibenik library Internet website
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	140775
1.2. Course title	**ENGLISH LANGUAGE III**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(15+30+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	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)	Obligatory	1.12. Number of course revisions	2
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □
2. COURSE DESCRIPTION			
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	Completed course English language II		

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

Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering, 2- understanding, 3- application, 4-analysis, 5-evaluation, 6-synthesis*
1. to understand, apply and link terms from the professional terminology of English road traffic and use them in written and oral communication	2, 3
2. to apply grammatical structures in texts and assignments	3
3. to interpret and use tenses in real-life context	3, 4
4. to develop a longer essay within the topics of the course	5, 6
5. to present own ideas for development of traffic problems	3
6. to communicate in a foreign language within the subjects of the course, to express one own opinions	6
7. to compare and evaluate different traffic solutions	5
8. to analyse complex texts and solve tasks	4
9. to use part of the general language competency at levels B1/B2	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-	2 h

	2.	Britains Earliest Roads – Tenses	1, 2, 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, understand, apply and link terms from the professional terminology of English 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.	4 h
	3.	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.	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
	4.	Roads And The Church - The Passive Voice, Sadašnja Vremena	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	4 h

					different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	5.	Early Carriages - The Passive Voice, Prošla Vremena	1, 2,3, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
	6.	Trade And Transport In The Turnpike Era - The Passive Voice, Buduća Vremena	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.	4 h

	7.	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
	8.	The World Of Transport - I Kolokvij	1, 2, 3, 5, 6, 9	Listen to lectures and take part in discussion. Write the colloquium.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h
	9.	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	6 h

					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.	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
	11.	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	10 h

					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.	
	12.	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
	13.	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 and	4 h

					solve tasks, use part of other language competences at B1 level.	
	14.	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.	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
	15.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions 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

<table>
<tr><td>3.1. Students` obligations</td><td colspan="6">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 Polytechnic of Šibenik and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.</td></tr>
<tr><td rowspan="6">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)</td><td>Attendance</td><td>0,5</td><td>Written exam</td><td>1 (without colloquia)</td><td>Project</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>Research</td><td></td><td>Practical work</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Report</td><td></td><td>Continuous examination</td><td></td></tr>
<tr><td>Colloquium</td><td>1 (without written exam)</td><td>Seminar paper</td><td></td><td>Other</td><td></td></tr>
<tr><td>Class activity</td><td>0,5</td><td>Oral exam</td><td>1</td><td>Other</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>3.3. Student workload</td><td colspan="6">Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as:
1. Attending classes and exercises 45 hours
2. Preparing colloquia or exams through individual work 45 hours</td></tr>
<tr><td colspan="7">4. GRADING SYSTEM</td></tr>
<tr><td>4.1. Grading seminar papers</td><td colspan="6">-</td></tr>
<tr><td>4.2. Grading colloquia/ written and oral exam</td><td colspan="6"><table><tr><th>Unsatisfactory</th><th>Satisfactory</th><th>Above average</th></tr><tr><td>Responds by memory, without a deeper understanding. Does not</td><td>Reproduces the basic concepts and without difficulty imparts new knowledge,</td><td>Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles, accurately and</td></tr></table></td></tr>
</table>

	know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	understands the material, explains the terms and concepts supported with examples.	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					
	Active course attendance	70-75% of attendance	76-86% of attendance	87-100% of attendance	Maks
		3 points	7 points	20 points	2
	Seminar paper				
	Colloquia/ Written exam	2	3	4	
		50-64,9%	65-79,9%	80-89,9%	9
		25 points	30 points	35 points	4
	Oral exam	2	3	4	
		25 points	30 points	35 points	4

4.3. Final grade according to absolute division			
	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (satisfactory)	D
	50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

	Title	**Number of copies in the library**	**Availability via other media**

5.1. Compulsory literature (available in the library and via other media)	Katja Bošković Gazdović: "English textbook of Transport I",Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 2002. (selected chapters)	10	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“, Veleučilište u Rijeci, Prometni odjel, 2007. 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 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	10	X (elearning, handouts)
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the 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).		

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

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

2. COURSE DESCRIPTION	
2.1. Course objectives	The goal is to provide students with theoretical knowledge: • 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 HKO.
2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.

2.4. Expected learning outcomes on the course level	**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.*
	1. sketch and select the required elements of the crane,	4, 3
	2. distinguish and propose types of cranes with regard to the scope,	2, 6
	3. calculate the productivity of transshipment mechanization with periodically action,	3
	4. define and calculate the number of pallets and containers required.	1, 3

	Constructive allignement					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
2.5. Course content according to detailed curriculum schedule	1.	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
		Crane operating class.	2, 3	They listen to a lecture and read literature. In the exercise classes, they are introduced to the calculation of the productivity of transshipment mechanization with periodically action and to calculate the productivity by the analytical method.	At the colloquium or the written and oral they can state and explain the crane classes and calculate theoretical and exploitative productivity.	2 h
	2.	Crane elements.	1, 2, 3	They listen to a lecture and read literature. In the exercise classes, they solve numerical	At the colloquium or written and oral examination knows enumerate,	3 h

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

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

	12.	Universal manipulative vehicles. Forklifts, loaders and small towing vehicles.	4	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks with the use of containers by analytical method.	The colloquium or written and oral exam knows specify and define universal manipulative vehicles. Give the forklift division and give an example from practice. Explain loaders, enumerate and describe small towing vehicles and give practical examples. Calculate the number of containers required.	3 h
	13.	Pallets and containers.	4	They listen to a lecture and read literature. In the teaching of exercises, they solve numerical tasks with the use of containers by analytical method.	At the colloquium or the written and oral exam they can define and list the types of pallets and containers and give practical examples. Calculate container control number.	3 h
	14.	Repetition and preparation for the colloquium. Colloquium II.	1, 2, 3, 4	They listen to a lecture and read literature. They prepare individually for the colloquium.	-	22 h
	15.	Concluding considerations. Repeating and preparing for the exam.		They listen to a lecture and prepare individually for the exam.	-	35 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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.

<table>
<tr><td></td><td colspan="6">Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two colloquium); b) during class (active participation in class and passing exams (written and oral part of the exam).</td></tr>
<tr><td rowspan="5">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)</td><td>Attendance</td><td></td><td>Written exam</td><td>3 (without colloquia)</td><td>Project</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>Research</td><td></td><td>Practical work</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Report</td><td></td><td>Continuous examination</td><td></td></tr>
<tr><td>Colloquium</td><td>3 (without written exam)</td><td>Seminar paper</td><td></td><td>Other</td><td></td></tr>
<tr><td>Class activity</td><td>0,5</td><td>Oral exam</td><td>0,5 (without colloquia)</td><td>Other</td><td></td></tr>
<tr><td>3.3. Student workload</td><td colspan="6">Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:
<table>
<tr><th>Obligation</th><th>Hours (estimated)</th></tr>
<tr><td>1. Active class attendance</td><td>45</td></tr>
<tr><td>2. Preparing colloquia or exams through individual work</td><td>75</td></tr>
</table></td></tr>
<tr><td colspan="7">4. FORMATION OF GRADES</td></tr>
<tr><td>4.1. Grading of seminar work</td><td colspan="6">-</td></tr>
<tr><td>4.2. Grading of the colloguium / written and oral exam</td><td colspan="6">
<table>
<tr><th>Bad</th><th>Satisfying</th><th>Above average</th></tr>
<tr><td>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.</td><td>It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.</td><td>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.</td></tr>
</table></td></tr>
</table>

4.3. Forming the final grade according to the evaluation elements	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		2 points	4 points	7 points	10 points
	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral part of the exam	2	3	4	5
		25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Šćap D.: Prenosila i dizala, FSB, Zagreb, 2004. (selected chapters)	-	Available online
	2. Boris Ribarić: Primjeri riješenih zadataka iz predmeta pretovarna mehanizacija, Fakultet prometnih znanosti, Zagreb, 1994. (selected chapters)	-	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Serdar J.: Prenosila i dizala, Leksikografski zavod "M. Krleža", Zagreb, 1995.	5	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 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).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Luka Olivari	1.8. Course code in ISVU	187606
1.2. Course title	**THEORY OF VEHICLE MOVEMENT**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	1.11. Level of e- learning application (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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim of the course is to provide students with theoretical knowledge and practical examples to acquire the knowledge necessary to successfully solve the problem of road vehicle exploitation.		
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 LO8: To solve problems in traffic by using analytical and / or graphical methods LO13: To track trends in the development of technique, technology and safety in traffic		
2.4. Expected learning outcomes on the course	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)		**Level of LO**: *1 - memory,* *2 - understanding,*

level (4-10 learning outcomes)		*3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Describe the basic concepts in vehicle movement theory	1, 2
	2. Distinguish the drive engines, concepts and elements of transmission of road vehicles.	4
	3. Formulate the final equation of motion of the vehicle based on the traction forces and the resistance of the movement of the vehicle.	6
	4. Evaluate the fuel economy of a road vehicle.	5
	5. Analyze the stability of the road vehicle under different operating conditions.	4

2.5. Course content according to detailed curriculum schedule	**Constructive allignement**					
	No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	Introductory presentation (introducing students to the content and obligations of the course). Area of study of vehicle motion theory. Exploitation of vehicle technical characteristics.	1	Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning course page. Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic terms, physical quantities and units of measurement.	**3 h**
	2.	Performance characteristics related to vehicle movement. Construction of motor vehicles.	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts; distinguish between drive engines, concepts and elements of	**3 h**

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

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

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

	14.	Construction of anti-lock braking systems for commercial vehicles. Characteristic installations of AB systems in passenger vehicles	1, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving.	At the colloquium or the written and oral exam they define and explain the basic concepts; analyze the stability of the road vehicle under different operating conditions; solve numerical tasks from the specified area;	**3 h**
	15.	Final consideration, repetition and preparation for the exam.	-	Listen to a lecture and read literature. Prepare individually for the exam.		**3 h**

3. EVALUATION OF STUDENT 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. Students can take the final exam in the course in two ways: a) during the course, by taking colloquiums and oral part of the exam; b) passing the written and oral part of the exam.

3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)

Attending classes	1,5	Written exam	1 (without colloquiums)	Project	
Experimental work		Research		Practical work	
Essay		Report		Continuous check	0,5
Colloquiums	1 (without written exam)	Seminar paper		Field works or Study trips	
Teaching activities		The oral part of exam	1	(other)	

3.3. Student work-load

Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), preparation of seminar work and presentation (30 hours).

Obligation	***Hours (estimated)***
1. Attending classes	45
2. Continuous check preparations	15
3. Colloquiums and written exam individual preparation	30
4. Oral exam individual preparation	30

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

				material. Fluent in professional terminology.

4.3. Forming the final grade according to the evaluation elements					
	Attending classes	> 80%	> 85%	> 90% prisustva	100%
		4 points	6 points	8 points	10 points
	Continuous check	0-5	6-10	11-15	16-20
	Colloquiums/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova
	The oral part of exem	2	3	4	5
		50-64,9 bodova	65-79,9 bodova	80-89,9 bodova	90-100 bodova

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	1. Perše, S., Višnjić, V. : Strojarstvo u prometu, Fakultet prometnih znanosti, Zagreb, 2005. (odabrana poglavlja) 2. Cerovac V., Tehnika i sigurnost prometa, Fakultet prometnih znanosti, Zagreb, 2001. (odabrana poglavlja)	10 5 5	

	3. Vrhovski D. Nikšić M., Osnove strojarstva, zbirka riješenih zadataka, Fakultet prometnih znanosti, Zagreb, 2000. (odabrana poglavlja)		
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course Technical Mechanics. 2. Rotim, F.: Elementi sigurnosti cestovnog prometa, Svezak 2. , Znanstveni savjet za promet HAZU, Zagreb, 1991.	- 1	on-line (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 course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	**DISTRIBUTIONAL CENTRES AND TERMINALS**	1.8. Course code at ISVU	140777
1.2. Course lecturer	Ana-Mari Poljičak	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+30+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Transport	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st- some of the material available Online, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Year of study	2nd	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 HKO.
	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 study programme level	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.	
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.	
	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 on the course level	**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.*
	1. demonstrate knowledge and understanding of the content of the course by defining and describing basic goods - distribution concepts,	1, 1
	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
	5. distinguish between types of storage and technological storage procedures.	2

	Constructive allignement					
2.5. Course content according to detailed curriculum schedule	**no**	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	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	-	2 h

				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.		
		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
	2.	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.	6 h
	3.	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	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.	8 h

				discussed are applied in the seminar teaching.		
	4.	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).	6 h
	5.	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. Seminar paper created and presented (using computer programs independently).	10 h
	6.	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,	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 land-based container terminals. Explain Huckepack technologies and list loading and unloading devices. Describe	10 h

				and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	storage types. Seminar paper created and presented (using computer programs independently).	
	7.	Ro-Ro terminals. Colloquium I.	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.	8 h
	8.	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 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 LUF and LASH terminals explain the technological processes of work on 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 (using computer programs independently).	8 h

	9.	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. Seminar paper created and presented (using computer programs independently).	10 h
	10.	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 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
	11.	Field teaching Port of Split and LDC KONZUM in Dugopolje.	2, 3, 4, 5	They listen to a lecture. (Visiting Split RO-RO, 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	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

				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. The experiential and self-discovery methods are applied.		
	12.	Terminals for the transhipment of liquid and 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).	11 h
	13.	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 work on seminar teaching, the	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 materials. Give an example for very heavy loads. List and describe methods for loading heavy loads on board. Enumerate loading / unloading	12 h

				brainstorming method and the discussion method on the topic are applied.	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 independently).	
	14.	Terminals for animal transshipment. Terminals for the transshipment of southern fruit and food products. Colloquium II.	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 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.	8 h
	15.	Concluding considerations. Repeating and preparing for the exam.		They listen to a lecture and prepare individually for the exam.	-	35 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year;					

	• From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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 development and presentation of seminar work and two colloquium); b) during class (active participation in class and development and presentation of seminar work) and passing exams (written and oral part of the exam).

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		Written exam	3 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	3 (without written exam)	Seminar paper	0,5	Other	
	Class activity	0,5	Oral exam	1 (without colloquia)	Other	

3.3. Student workload

Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:

Obligation	***Hours (estimated)***
1. Active class attendance	60
2. Designing a seminar paper and presentation	20
3. Preparing colloquia or exams through individual work	70

4. FORMATION OF GRADES

4.1. Evaluation of a of seminar work

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.
Terminology, writing style	Words and expressions low in line with official terminology. The	Words and expressions are in line with official terminology. The	Words and expressions are aligned with official terminology and show an

		writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.	writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors.	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.

4.2. Grading of the colloguium / written and oral exam	**Bad**	**Satisfying**	**Above average**
	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements					
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		2 points	4 points	7 points	10 points
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral part of the exam	2	3	4	5
		25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A

	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Poljičak, A.-M., Ljubić Hinić, M.: Robni terminali, Autorizirana skripta, VUS, Šibenik, 2016.		Available online
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Dundović, Č.: Lučki terminali, PFR, 2002. 2. Mlinarić T. J.: Robno transportni centri, Fpz, Zagreb, 2013. 3. Dundović, Č., Kesić, B.: Tehnologija i organizacija luka, PFR, Rijeka, 2001. 4. Kirinčić, J.: Luke i terminali, Školska knjiga, Zagreb, 1991.	3 2 3	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 Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	140771
1.2. Course title	**TRAFFIC CORRIDORS AND MERCHANDISE FLOWS**	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 (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The goal is that students on the basis of theoretical knowledge and case studies: ▪ become familiar with the creation and development of all transport modes, ▪ analyze and comment of commodity exchange (trade) in the World and Croatia, ▪ distinguish the main transport corridors in Europe and Croatia.		
2.2. Terms of course entry and required competences	Enrolled 2nd academic year, 4 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 for decision making. LO6: Analyze and present relevant facts from the traffic area required to reach conclusions. LO10: Compare and select technical and technological solutions for traffic and/or goods flows. LO12: Design a smaller transport process and critically evaluate it.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Present and comment on the historical development of the traffic branches.	6, 3
	2. List and explain the main factors for the creation and development of commodity flows.	1, 2
	3. Analyze and evaluate world trade in goods.	4, 5
	4. Present and comment on the traffic connection of the Republic of Croatia.	6, 4
	5. List and compare major transport corridors in Europe and the Republic of Croatia.	1, 2
	6. Comment on the objective and strategy of the Marco Polo Program and the current White Paper EU about transport.	4
	7. Use materials and tools to search scientific and professional literature in native and English languages.	3
	8. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introductory presentation (introducing students to the course content and obligations)	-	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	-	**2 h**
2.	Geo-traffic factors of formation and location of commodity flows	**2, 7, 8**	They listen to a lecture and read literature. At the seminar class, they individually	At the colloquium or the written and oral exam students know	**6 h**

		(General geo-traffic factors, natural predispositions, socio-economic factors)		explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	how to define, numerate and distinguish the main factors for the formation and development of commodity flows (general, natural and socio-economic factors). Identify abbreviations of economic groups of the world. Seminar paper created and presented (by computer programs).	
	3.	The development of transport on land (development of road, rail, and pipeline transport)	**1, 3, 7, 8**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or written and oral exam students know to present and comment on the historical development of transport on land. Analyze and evaluate the merchandise trade in land traffic, in the world. Seminar paper created and presented (by computer programs).	**6 h**
	4.	The development of transport on the water (history, World and European ports, shipping routes, ships for freight)	**1, 3, 7, 8**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method	At the colloquium or the written and oral exam students know how to present and comment on the historical development of water traffic, the development of seaports. Analyze and evaluate the merchandise of trade in the world's water transport. Categorize seaports, regions, and	**6 h**

				and the discussion method on the topic are applied.	routes. Seminar paper created and presented (by computer programs).	
	5.	The development of transport on the water (video films)	**1, 3, 7, 8**	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or written and oral exam students know present seaports in the world. Identify and distinguish terminals at the seaport. Analyze and evaluate the cargo traffic of the seaport. Categorize seaports, ships, regions, and routes. Seminar paper created and presented (by computer programs).	**6 h**
	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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	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	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	**6 h**

				the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	passenger and cargo transportation. Analyze and evaluate continental air routes. Seminar paper created and presented (by computer programs).	
	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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	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 knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can identify and compare major traffic corridors in Europe and the Republic of Croatia. Present, critically evaluate the traffic connection of the Republic of Croatia in the road, rail, air, pipeline and inland waterway transport. Seminar paper created and presented (by computer programs).	**6 h**

	10.	Merchandise and traffic flows in the modern world (Concept and characteristics of traffic flow, commodity flows of food, raw materials, and industrial products)	**3, 7, 8**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students know how to define the concept of goods traffic. Categorize, analyze and evaluate the world trade of food, raw materials, and industrial products. List the countries with the largest importers and exporters of all types of goods. Seminar paper created and presented (by computer programs).	**6 h**
	11.	Merchandise and traffic flows of the Republic of Croatia (import and export of products, merchandise and traffic flows of the Republic of Croatia in land, water, and air)	**3, 4, 7, 8**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam students know how to analyze and evaluate the trade of products in the Republic of Croatia. List the products that the Republic of Croatia imports/exports the most. Present, critically evaluate and comment on the traffic connection of the Republic of Croatia in all branches of traffic. Seminar paper created and presented (by computer programs).	**6 h**
	12.	Marco Polo Program (program objective, program activities, program projects)	**6, 7, 8**	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the	At the colloquium or the written and oral exam, students can define the goal and strategy of the Marco Polo program.	**4 h**

				database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	Distinguish activities Marco Polo. Critically evaluate the professional video films program.Seminar paper created and presented (by computer programs).	
	13.	European Union White Paper on Transport (White Paper titles, key content areas, preparing the European transport area for the future, visions for developing a competitive and sustainable transport system, strategy - what needs to be done)	**6, 7, 8**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or written and oral exam, students define objective and strategy of the current EU White Paper on transport. Comment on EU professional projects in the field of transport. Seminar paper created and presented (by computer programs).	**6 h**
	14.	Study visit to the port of Rijeka	**3, 4, 5**		During the study visit, students will be able to analyze and evaluate the exchange of products through seaports in the Republic of Croatia. To present and comment on the traffic connection of the Republic of Croatia in road and rail transport. List and compare major transport corridors in Europe and the Republic of Croatia.	**8 h**

	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	**40 h**

3. EVALUATION OF STUDENT WORK						
3.1. Student 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	1	Written exam	1 (without colloqiums)	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
	Teaching activities	1	The oral part of exam	0,5	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as attendance (60 hours), preparation of seminar work and presentation (16 hours), preparation for the midterm/exam through self-study (44 hours).					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.
	Terminolog, writing style	Words and expressions are not in line with official terminology. The writing	Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear,	Words and expressions are aligned with official terminology and show an understanding of their meaning. The

		style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.	the vocabulary is appropriate and there are few grammatical errors.		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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
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

	Oral part of exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Sego Darijo: Traffic corridors and merchandise flows, Script for internal use, Polytechnic of Sibenik, Sibenik 2016.		e-learning system
	Strategy for Transport Development of the Republic of Croatia for the Period 2014-2030. (selected chapters)		Internet website
	World trade organization http://www.wto.org/ (selected chapters)	-	Internet website
	Transport in EU http://ec.europa.eu/transport/index_en.htm(selected chapters)	-	Internet website
	Central Bureau of Statistics of the Republic of Croatia https://www.dzs.hr/		Internet website
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of Sibenik for the mentioned course. International trade statistics https://www.trademap.org/Index.aspx UN agency for food http://www.fao.org/home/en/	-	e-learning system Internet website Internet website
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey,		

	monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Dragan Bolanča	1.8. Course code in ISVU	169046
1.2. Course title	**TRAFFIC LAW**	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 (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	2
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The main aim of class is informing students about fundamental institutes of various branches of traffic including their important role in the world trading. Because geographical location of Croatia points out to importance of maritime law, the maritime traffic is in focus. Also, the administrative and civil law of road traffic is elaborated in comparison with another branches of traffic.		
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.		
2.3. Learning outcomes on the study programme level	IU2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders. IU3: Independently and responsibly search, interpret and integrate relevant literature for decision making. IU4: To know the basic institutes of traffic law in all branches of traffic. IU8: Analytically solving law problems.		
2.4. Expected learning outcomes on the course	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)		**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,*

level (4-10 learning outcomes)		*4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. To describe modern methodologically tendencies in legal sciences, especially in traffic law.	1, 2
	2. To perceive and recognize actual institutes in traffic law.	2, 3
	3. To apply acquired methodological knowledge and solve practical traffic problems.	3
	4. To approach analytically to empirical material.	4, 5
	5. To individually and responsibly make decisions in the frame of individual law traffic institute.	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introductory presentation (introducing students to the course content and obligations)	-	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	-	**2 h**
1.	MARITIME TRAFFIC: Safety of maritime navigation and maritime objects	**1, 6, 7**	They listen to a lecture and read literature.	At the oral exam, students know how to define the basic elements of safety of maritime navigation and maritime objects.	**4 h**
2.	Proprietary rights on ship and crewmember of maritime ship (seaman)	**1, 6, 7**	They listen to a lecture and read literature.	At the oral exam, students know how to enumerate and distinguish the kinds of basic proprietary rights on ship and define the basic terms in conection with crewmember of maritime ship (seaman).	**4 h**

	3.	Tort liabilty of shipowner and ship operator and general limitation of shipowner's liability	**1, 6, 7**	They listen to a lecture and read literature.	At the oral exam, students know how to define all cases of tort liabilty of shipowner and ship operator including the limit of their liability.	**4 h**
	4.	Maritime accidents and salvage at the sea	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define the maritime accidents and the salvage at the sea. Seminar paper created and presented (by computer programs).	**6 h**
	5.	Shipbuilding contract and contract of maritime agency	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define and describe the basic terms of shipbuilding contract and contract of maritime agency. Seminar paper created and presented (by computer programs).	**6 h**
	6.	Contract of carriage of goods by sea	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define and describe the basic terms of contract of carriage of goods by sea. Seminar paper created and presented (by computer programs).	**4 h**

				knowledge and presents their own ideas, and ways to solve problems.		
	7.	Contract of carriage of passengers and luggage by sea	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define and describe the basic terms of contract of carriage of passengers and luggage by sea. Seminar paper created and presented (by computer programs).	**4 h**
	8.	TRAFFIC OF INLAND WATER NAVIGATION: Administrative and civil law	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define and describe the kinds of administrative and civil law in inland water navigation. Seminar paper created and presented (by computer programs).	**6 h**
	9.	ROAD TRAFFIC: Public and unpublic roads (building, maintenance, direction and using)	**1, 6, 7**	They listen to a lecture and read literature.	At the oral exam, students know how to define and describe the kinds of public and unpublic roads including the modes of their building, maintenance, direction and using. Seminar paper created and presented (by computer programs).	**4 h**
	10.	The conditions and modes of making of national carigge of passengers and goods on road. The	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature.	At the oral exam, students know how to define and describe the conditions and modes of making of	**4 h**

		conditions and modes of f international carigge of passengers and goods on road.			national and international carigge of passengers and goods on road.	
	11.	Agency services, services of passenger and trucking terminals, law conditions for drivers and vehicles	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature.	At the oral exam, students know how to define and describe the basic terms of agency services, services of passenger and trucking terminals, law conditions for drivers and vehicles.	**4 h**
	12.	Contract for the carriage of goods by road, contract for the carriage of passengers by road	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define and describe the basic terms of contract for the carriage of goods by road and contract for the carriage of passengers by road Seminar paper created and presented (by computer programs).	**4 h**
	13.	RAILWAY TRAFFIC: Administrative and civil law	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group 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 oral exam, students know how to define and describe the kinds of administrative and civil law in railway traffic. Seminar paper created and presented (by computer programs).	**4 h**
	14.	AIR TRAFFIC: Administrative and civil law	**1, 2 3, 4, 5, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually or in group explore the	At the oral exam, students know how to define and describe the kinds	**6 h**

				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.	of administrative and civil law in railway traffic. Seminar paper created and presented (by computer programs).	
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	**24 h**

3. EVALUATION OF STUDENT WORK						
3.1. Student 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	0,5	Written exam	1 (without colloqiums)	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
	Teaching activities	1	The oral part of exam	2	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as attendance (15 hours), preparation of seminar work and presentation (15 hours), preparation for the midterm/exam through self-study (60 hours).					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.
	Terminolog, writing style	Words and expressions are not 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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
	Active attendance on class	70-75% attendance	76-86% attendance	87-100% attendance	Mental map created, Case studies resolved

4.3. Forming the final grade according to the evaluation elements		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
	Oral part of exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Bolanča, D., Prometno pravo (electronic book), Veleučilište, Šibenik, 2016		
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Vasilj, A., Činčurak Erceg, B., Prometno pravo i osiguranje, Pravni fakultet, Osijek, 2016	0	
5.3. Quality assurance methods that ensure the	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		

acquisition of knowledge, skills and competences	their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

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

1. GENERAL INFORMATION			
1.1. Course title	**TECHNOLOGY AND ORGANIZATION OF PUBLIC CITY TRANSPORT**	1.8. Course code at ISVU	140782
1.2. Course lecturer	Martina Ljubić Hinić	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30L+15P)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	2nd	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 to: • know the basic principles of public transport; • understand the advantages and disadvantages of conducting public passenger and freight transport; • adopt knowledge and a logical way of thinking about the possibilities of organizing public transport; • learn and understand the issues of the relationship between public and individual transportation; • know the possibilities of improving public transport and increasing the mobility of passengers; • 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 HKO.

2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.
	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.
	LO9: Assess and organize processes in the field of road transport and / or transport logistics.
	LO13: Follow trends in technology, technology and traffic safety.
2.4. Expected learning outcomes on the course level	**Learning outcomes according to Bloom's taxonomy:**
	1. to define and describe the public transportation system 1, 1 2. to explain and distinguish between the technical and technological features of the public transport system 2, 4 3. to analyze and identify the wishes and behaviors of travelers 4, 1 4. to distinguish conventional from innovative passenger transport technologies 4 5. to identify and connect the needs and opportunities for improving public transport organization in cities 1, 5 6. to use materials and tools to search scientific and professional literature in their native and English languages 3 7. to present the acquired knowledge, ideas, problems and solutions independently and in a team 6

2.5. Course content according to detailed curriculum schedule	**Constructive allignement**					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	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

		Historical development.	1, 6	Listen to lectures and read literature.	In colloquium or the written and oral exam they indicate the historical development of the elements of the public urban transport system.	2 h
	2.	Symbiotic connection city - public urban transport. Public urban transport in the Republic of Croatia.	1, 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 the written and oral exam they define, enumerate and explain the factors that influenced the development, location and structure of cities, and enumerate and describe forms of public transport in the Republic of Croatia and their efficiency in passenger mobility.	3 h
	3.	The meaning and efficiency of public urban transport.	1, 3, 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 define and describe the problems and significance of public urban transport, and state and explain the criteria for evaluating efficiency, with suggestions for improvement.	3 h
	4.	Urban passenger transport technology.	1, 2, 3, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they state the need and role of public transport, define the main technologies and modes of traffic in cities and state the consequences of greater representation of individual transport in relation to public transport. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h

	5.	Urban passenger transport technology.	1, 2, 3, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they can state the need and role of public transport, define the main technologies and modes of traffic in cities and state the consequences of greater representation of individual transport in relation to public transport. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h
	6.	Urban passenger transport technology.	1, 2, 3, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they can state the need and role of public transport, define the main technologies and modes of traffic in cities and state the consequences of greater representation of individual transport in relation to public transport. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h
	7.	Models of passenger behavior. Planning of public urban passenger transport.	1, 2, 3, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define the levels of traffic planning and explain the process of planning public transport taking into account the wishes of passengers. Seminar work is organized in groups, with discussion and proposing measures for	3 h

					possibilities of improving public transport.	
	8.	Public passenger transport vehicles. 1st Colloquium	1, 2, 3, 5, 6	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they define and state the types and types of public transport vehicles and their technical and technological characteristics that are important for the establishment and organization of public transport systems.	38 h
	9.	Public passenger transport vehicles.	1, 2, 3, 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 define and state the types and types of public transport vehicles and their technical and technological characteristics that are important for the establishment and organization of public transport systems. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h
	10.	Conventional modes of public transportation.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and state the types and methods of conventional public transport and their technical, technological and exploitative characteristics, which are important for the establishment and organization of the public transport system. Seminar work is organized in groups, with discussion and proposing measures for	3 h

					possibilities of improving public transport.	
	11.	Conventional modes of public transportation.	1, 3, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and state the types and methods of conventional public transport and their technical, technological and exploitative characteristics, which are important for the establishment and organization of the public transport system. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h
	12.	Network of public transport lines.	1, 3, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and describe the types of networks and ways of providing the route of lines, to specify and analyze the factors that determine the quality of the network of lines. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h
	13.	Urban expansion, telecommuting and transportation. Paratransit.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the	In colloquium or written and oral exams they state and describe the causes and consequences of urban expansion, and define and describe the forms of paratransit and its effects and influence on the public transportation system in	3 h

				read literature, come up with their own ideas, and ways to solve problems.	cities. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	
	14.	Innovative transportation technologies. 2nd Colloquium.	1, 2, 3,4, 5, 6, 7	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they define and describe the forms of innovative transport technologies, and explain the effects and impact on the public transport system.	38 h
	15.	Concluding considerations. Repeating and preparing for the exam.	6, 7	They listen to a lecture and prepare individually for the exam.	-	38 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total	Attendance	1	Written exam	1 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	

number of ECTS points corresponds to the credit score of the course)	Colloquium	1 (without written exam)	Seminar paper	1	Other	
	Class activity	1	Oral exam	1	Other	
3.3. Student workload	Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as: 1. Attendance 30 h 2. Design of seminar work and presentation 15 h 3. Preparation for the mid-term / midterm exam 115 h					

4. FORMATION OF GRADES

4.1. Grading of seminar work

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.
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.

4.2. Grading of the colloguium / written and oral exam

Bad	**Satisfying**	**Above average**
It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to	It reproduces the basic concepts and without difficulty imparts new knowledge,	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains

	apply or explain the contents of the course with examples.	understands the material, explains the terms and concepts that it supports with examples.	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	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		0 points	0 points	0 points	0 points
	Seminar paper	2	3	4	5
		Made and handed over	Made and handed over	Made and handed over	Made and handed over
	Examination / Written examination	2	3	4	5
		50-64%	65-80%	81-90%	91-100%
		25-32 points	33-40 points	41-45 points	46-50 points
	Oral part of the exam	2	3	5	5
		25-32 points	33-40 points	41-45 points	46-50 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Štefančić, G.: Tehnologija gradskog prometa I, FPZ, 2008. (odabrana poglavlja)	3	No
5.2. Supplementary literature (at the time of	1. Štefančić, G.: Tehnologija gradskog prometa II, FPZ, 2010. 2. Suvremeni promet; časopis Hrvatskog znanstvenog društva za promet, Zagreb	0 0	 No

the submission of changes and / or additions to the study program)	3. Banister, D. : Transport and Urban Development, E & FN Spon, New York, 1995. 4. Lectures	0	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 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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Ivana Kardum Goleš	1.8. Course code in ISVU	140784
1.2. Course title	**ENGLISH LANGUAGE IV**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(15+30+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of traffic	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)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □
2. COURSE DESCRIPTION			
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	Completed course English language III		
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		

	Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering,* *2- understanding,* *3- application,* *4-analysis,* *5-evaluation,* *6-synthesis*
	1. to understand, apply and link terms from the professional terminology of English road traffic and use them in written and oral communication	2, 3
	2. to create CV (Europass template), job application, offer, complaint	3, 4, 6
	3. to interpret and use tenses in real-life context	3, 4
	4. to develop a longer essay within the topics of the course	5, 6
	5. to present own ideas for development of traffic problems	3
	6. to communicate in a foreign language within the subjects of the course, to express one own opinions	6
	7. to compare and evaluate different traffic solutions	5
	8. to analyse complex texts and solve tasks	4
	9. to use part of the general language competency at levels B1/B2	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introduction into the course and detailed plan.	-	Listen to lectures. Work independently on computer, get to know course content and elearning documents.	-	2 h
2.	Early Trading Conditions – Tenses CV – Europass template	1, 2, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, understand, apply and link terms from the professional terminology of English 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.	4 h

3.	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
4.	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
5.	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	4 h

					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.	Tehnological Advances In The Twenty-First Century - Direct And Indirect Speech - Commands, Requests, Advice Past	1, 3, 5, 6, 9	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	4 h
	7.	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

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

					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.	
	11.	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
	12.	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
	13.	The Modern Wonder Of Electronics - Business Letters – Job Intervju	1,2, 3,4, 5,	Listen to lectures and read literature. During lectures individually research the content	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted	4 h

			6, 7, 8, 9	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 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.	
	14.	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
	15.	Revision – II Kolokvij	1, 2, 3, 4,5, 6, 7, 8, 9	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and	10 h

						solve tasks, use part of other language competences at B1 level.		

3. EVALUATION OF STUDENTS` WORK						
3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time 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 Polytechnic of Šibenik and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
3.2. Monitoring student 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	1 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	1 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	1	Other	
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 1. Attending classes and exercises 45 hours 2. Preparing colloquia or exams through individual work 45 hours					

4. GRADING SYSTEM			
4.1. Grading seminar papers	-		
4.2. Grading colloquia/ written and oral exam	**Unsatisfactory**	**Satisfactory**	**Above average**

	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 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.

4.3. Final grade according to evaluation elements					
	Active course attendance	70-75% of attendance	76-86% of attendance	87-100% of attendance	Mak
		3 points	7 points	20 points	
	Seminar paper				
	Colloquia/ Written exam	2	3	4	
		50-64,9%	65-79,9%	80-89,9%	
		25 points	30 points	35 points	
	Oral exam	2	3	4	
		25 points	30 points	35 points	

4.3. Final grade according to absolute division		
Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (satisfactory)	D
50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

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",Sveučilište u Zagrebu, Fakultet prometnih znanosti, 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“, Veleučilište u Rijeci, Prometni odjel, 2007. 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 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	10	X (elearning, handouts)
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the 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).		

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	142746
1.2. Course title	**PROFESSIONAL PRACTICE**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e learning)	-
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2nd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	2	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 for students to draw on theoretical knowledge and case studies: ▪ to analyze and describe jobs in transport companies, ▪ to distinguish the necessary equipment for professional activities, ▪ to categorize services provided by transport companies, ▪ to compare business processes in different or similar companies.		
2.2. Terms of course entry and required competences	Enrolled 2nd academic year, tested III. semester of the current academic year		
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 for decision making. LO6: Analyze and present relevant facts from the traffic area required to reach conclusions.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Analyze and comment on the location and traffic connections of professional visiting firm (company).	4, 3
	2. Identify the equipment and categorize the services of professional visiting firm.	2, 4
	3. Make and explain a SWOT analysis of professional visiting firm.	4, 2
	4. Design and explain the logical matrix of professional visiting firm.	4, 2
	5. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.	6
	6. Use materials and tools to search the scientific and professional literature in their native language.	3

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introductory presentation (introducing students to the content and obligations of the course).	-	They listen to a lecture. By working independently on a computer, they are introduced to the course content, writing a seminar paper and documents on the e-learning page of the course.		**2 h**
2.	Professional visit to a company performing transport-related activities (KONZUM Logistics and Distribution Center).	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services	Seminar paper created and presented (using computer program).	**3 h**

				that the company performs, future development.		
	3.	Professional visit to a company performing transport-related activities (LIDL Logistics and Distribution Center).	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**
	4.	Professional visit to a company performing transport-related activities (MLINAR bakery)	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**
	5.	Professional visit to a company performing transport-related activities (Šibenik winery)	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**
	6.	Professional visit to a company performing transport-related activities (TLM-IMPOL warehouse)	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**

	7.	Professional visit to a company performing transport-related activities (Port of Šibenik)	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**
	8.	Professional visit to a company performing transport-related activities (Port of Split)	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**
	9.	Professional visit to a company performing transport-related activities (VELPRO Logistics and Distribution Center).	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**3 h**
	10.	Professional visit to a company performing transport-related activities (Container terminal BRAJDICA Port of Rijeka).	**1, 2**	They listen to a lecture by an expert from a professional visiting firm. Students are introduced to the organization and work processes, company equipment, traffic connections, basic and additional services that the company performs, future development.	Seminar paper created and presented (using computer program).	**4 h**

	11.	Final consideration	**1, 2, 3, 4, 5, 6**		Seminar paper created and presented (using computer program).	**30**

3. EVALUATION OF STUDENT WORK						
3.1. Student obligations	In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of Student Performance: Students are required to go on study trips and fieldwork at companies engaged in transport activities. All students must create and present a seminar paper. Seminar work is brought to the head of the professional practice for review by students. The leader of the professional practice evaluates the seminar paper and presentation with or not satisfied.					
3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes		Written exam		Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums		Seminar paper	1	Field works or Study trips	1
	Teaching activities		The oral part of exam		(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), preparation of seminar work and presentation (30 hours).					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.
	Terminolog, writing style	Words and expressions are not in line with official terminology. The writing style is not appropriate, the	Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is	Words and expressions are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are

		sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.	appropriate and there are few grammatical errors.		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.

4.3. Forming the final grade according to the evaluation elements					
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	The oral part of exem	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

5.1. Compulsory literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Company websites where students attended fieldwork.		Internet website

	Obtained company materials where students were in fieldwork.		Internal materials of professional visiting firm (company)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Professional website in the native and foreign language in the field of transport activities, where the students were on fieldwork.		Internet website
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	187603
1.2. Course title	**INFRASTRUCTURE OF ROAD TRANSPORT**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e learning)	(45 + 15 + 30 + 0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	3rd	1.13. Modernization	Yes
1.7. Credit score (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 that students on the basis of theoretical knowledge and case studies: ▪ define the concept of roads, become familiar with the division, classification, and categorization of roads, ▪ get acquainted with the documentation needed for road design, ▪ distinguish and describe the elements and parts of the road (lower and upper structures) and road constructions, ▪ sort the road equipment, and road works on regular and extraordinary maintenance, ▪ make a difference within city roads, road intersections, and parking arrangements.		
2.2. Terms of course entry and required competences	Enrolled 3nd academic year		
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. LO4: Apply knowledge of natural and technical sciences to road transport problems. LO7: Apply computer tools for data analysis and comparison, and propose an optimal solution in the traffic process.		

	LO8: Solve traffic problems using analytical and/or graphical methods. LO11: Identity, anticipate and propose a road transport technology and technique solution. LO12: Design a smaller transport process and critically evaluate it.	
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Define terms and categorize roads and road intersections in the Republic of Croatia.	1, 3
	2. Calculate and sketch the basic road elements required for design and construction.	2, 4
	3. Distinguish and compare the lower and upper structures of the road, road structures, associated roadside facilities, parking lots and garages.	2, 4
	4. Enumerate and propose necessary road equipment, road maintenance works.	1,6
	5. Distinguish the city roads, streets, and road junctions.	4
	6. Use materials and tools for searching scientific and technical literature in the native and English language.	3
	7. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.	6
	8. Tell, summarize the history of road construction in the world and the Republic of Croatia.	1, 2

2.5. Course content according to detailed curriculum schedule

Constructive allignement

	No	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
	1.	Introductory presentation (introducing students to the course content and obligations)	-	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning	-	**3 h**

				page of the course by working independently on a computer.		
	2.	Development of road construction (the historical development of roads in the World and the Republic of Croatia).	**6, 7, 8**	They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, students are knowing with the general content of the transport project.	At the colloquium or written and oral exam, students know tell, summarize and comment on road construction throughout history, isolate the most dangerous roads in the world, list the historical roads in the Republic of Croatia, indicate the country with the longest road network in the world. Exercise created, seminar paper created and presented (by computer programs).	**6 h**
	3.	Road classification (classification based on the law of roads, the classification standards, types of roads in the Republic of Croatia)	**1, 6, 7**	They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is project assignment.	At the colloquium or the written and oral exam, students can define the concept of the road on the basis of the Roads Law of the Republic of Croatia, categorize roads, establish the difference between individual categories of roads, identify the most important roads in the Republic of Croatia. Exercise created, seminar paper created and presented (by computer programs).	**6 h**

	4.	Road design I (project documentation, road indicators, tracing, layout elements)	**2, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is routing of the road.	At the colloquium or the written and oral exam, students can state and differentiate the study project documentation, sort the order of the road design, determine the difference between the individual terrain paths that the road passes through, distinguish and explain and calculate speeds, and analyze the layout elements of the road. Exercise created, seminar paper created and presented (by computer programs).	**7 h**
	5.	Road design II (elements of longitudinal sections, road cross-sections, drainage elements)	**2, 6, 7**	They use multimedia and network. They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is the calculation of elements of the horizontal and vertical bend.	At the colloquium or the written and oral exam, students know how to distinguish between the terrain and the level of the road, analyze and describe the road elements, enumerate and extract hydro-meteorological data and drainage elements. Exercise created, seminar paper created and presented (by computer programs).	**7 h**

	6.	Road design – guest lecture	**2, 6, 7**	They listen a guest lecture about topic. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students define the basic terms and concepts of road and road intersection. Specify and distinguish the study design documentation, sort the order of road design. Analyze and describe the elements of the road. Exercise created, seminar paper created and presented (by computer programs).	**7 h**
	7.	Road structure (lower and upper part of road structure)	**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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is Creating a horizontal bend.	At the colloquium or the written and oral exam, students can define the concept of the lower and upper road structure, list and describe the parts of the lower and upper road structure, distinguish road structures, draw the shapes of the hull, establish the difference in the mode of ventilation in tunnels, identify factors for the choice of road curtain.. Exercise created, seminar paper created and presented (by computer programs).	**7 h**
	8.	Road equipment (traffic signs and signaling)	**1, 4, 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	At the colloquium or written and oral exam, students can sort the road equipment, distinguish between road equipment and	**7 h**

				it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is Creating vertical bends.	traffic equipment, describe road signs, vertical, horizontal and light traffic signs. Exercise created, seminar paper created and presented (by computer programs).	
	9.	Road equipment (traffic signs and signaling) – guest lecture	**1, 4, 6, 7**	They listen a guest lecture about topic. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students know how to sort traffic signs and signaling. Make a difference between marking road signs, describe road signs, vertical, horizontal and light traffic signs. Exercise created, seminar paper created and presented (by computer programs).	**7 h**
	10.	Maintenance of the road (the main goals of maintenance, regular and periodic maintenance, machinery for road maintenance)	**3, 4, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is making of notches, cuts, and embankments.	At the colloquium or written and oral exam, students can state the basic goals of road maintenance and protection, identify the types of road maintenance, distinguish between regular and winter road maintenance, enumerate and describe road maintenance works, categorize road maintenance machinery. Exercise created, seminar paper	**7 h**

					created and presented (by computer programs).	
	11.	Urban roads and streets (division by economic and traffic characteristics, elements of urban roads and streets in the transversal sense)	**5, 6, 7**	They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is the design of traffic intersections.	At the colloquium or the written and oral exam, students can enumerate parts of the city street network, choose the form of the city street network, enumerate and distinguish between primary, secondary and other city roads. Comment on the city street network of individual settlements. Exercise created, seminar paper created and presented (by computer programs).	**7 h**
	12.	Road intersections (basic construction criteria, traffic operations in intersections, division of road intersections, special forms of intersections)	**1, 4, 5, 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. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is Budget bandwidth.	At the colloquium or the written and oral part, students can define the terms of road intersections in and out of level, state and identify traffic operations in the intersection, distinguish intersections by location, size, number of traffic. Find out the difference between a road intersection and a hub. Exercise created, seminar paper created and presented (by computer programs).	**7 h**
	13.	Parking place and garages (basic terms of stationary traffic, modes	**3, 4, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually	At the colloquium or the written and oral exam, students can	**6 h**

		of on-street and off-street parking, division of parking garages, equipment of parking garages)		explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is elaborate on the ideal and final design.	define the basic term of parking spaces, parking places, and parking garages. Analyze the ways to park vehicles on-street and off-street surfaces. List the parts and equipment of the parking garage. Recommend location for building parking lot and parking garage. Exercise created, seminar paper created and presented (by computer programs).	
	14.	Service facilities on the roads (bus stops, stations, and terminals, rest stations, gas stations)	**3, 6, 7**	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar class, the brainstorming method and the discussion method on the topic are applied. During exercises, the topic is Control intersection elements and traffic signs.	At the colloquium or in the written and oral exam, students can enumerate and describe the accompanying roadside service facilities. To distinguish between standpoint and guesswork. Evaluate the location of the bus stations. Exercise created, seminar paper created and presented (by computer programs).	**6 h**
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	**90 h**
3. EVALUATION OF STUDENT WORK						
3.1. Student 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					

<table>
<tr><td></td><td colspan="6">papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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).</td></tr>
<tr><td rowspan="6">3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)</td><td>Attending classes</td><td>1,5</td><td>Written exam</td><td>1 (without colloqiums)</td><td>Project</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>Research</td><td></td><td>Practical work</td><td>0,5</td></tr>
<tr><td>Esaay</td><td></td><td>Report</td><td></td><td>Continuous check</td><td></td></tr>
<tr><td>Colloquiums</td><td>1 (without written part of exam)</td><td>Seminar paper</td><td>1</td><td>(other)</td><td></td></tr>
<tr><td>Teaching activities</td><td>1</td><td>The oral part of exam</td><td>1</td><td>(other)</td><td></td></tr>
<tr><td>3.3. Student work-load</td><td colspan="6">Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as: attendance classes (45 hours), preparation of seminar work and presentation (30 hours), attending exercises and making the final exercise (15 hours), preparation for the midterm/exam through self-study (90 hours).</td></tr>
<tr><td colspan="7">4. FORMATION OF STUDENT GRADE</td></tr>
<tr><td rowspan="3">4.1. Evaluation of seminar paper</td><td>Elements of evaluation</td><td colspan="2">Bad</td><td colspan="2">Satisfying</td><td>Above average</td></tr>
<tr><td>Organization</td><td colspan="2">The paper is not organized in a logical order and lacks structure.</td><td colspan="2">The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion.</td><td>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.</td></tr>
<tr><td>Terminolog, writing style</td><td colspan="2">Words and expressions are not in line with official terminology. The writing style is not appropriate, the sentences are too long, of a modest vocabulary</td><td colspan="2">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.</td><td>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.</td></tr>
</table>

		and with frequent and repeated 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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
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
	Oral part of exam	2	3	5	5

		25 points	30 points	35 points	40 points
4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)		Numerical grade		ECTS grade
	90 – 100%		5 (excellent)		A
	80 – 89,9%		4 (very good)		B
	65 – 79,9%		3 (good)		C
	60 – 64,9%		2 (sufficient)		D
	50 – 59,9%		2 (sufficient)		E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Legac I.: Roads I, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2001. or in 2006.	4	-
	Legac I.: Intersections of public Roads - Road II, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2008. (selected chapters)	2	-
	The Law on the Croatian roads https://zakon.hr/z/244/Zakon-o-cestama (selected chapters)	-	Internet website
	Ministry of Maritime Affairs, Transport and Infrastructure, Rule book on traffic signs, signalization and equipment on the roads (the proposal), Zagreb 2015 (selected chapters)	-	Internet website
	Brčić D., Šoštarić M .: Parking and Garages, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2012. (selected chapters)	-	Internet website
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of Sibenik for the mentioned course. Traffic Zone https://www.prometna-zona.com/ Traffic Signals https://www.prometna-signalizacija.com/ Croatian Roads https://hrvatske-ceste.hr/ First Blinker http://prvitreptac.hr/ Croatian Motorways http://hac.hr/hr	-	e-learning system Internet website Internet website Internet website Internet website Internet website

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	**RESOURCES AND EXPLOITATION OF ROAD TRAFFIC**	1.8. Course code at ISVU	142536
1.2. Course lecturer	Ivan Mavrin	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	Ana-Mari Poljičak	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45+15+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Transport	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Year of study	3rd	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 concepts in the field of road vehicle exploitation; • Differentiate the vehicle's performances, parts and assemblies; • Learn how to review vehicle reliability changes, select and describe system diagnostics, and choose the optimal maintenance option for the given operating conditions; • 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 HKO.
	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 study programme level	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.	
	LO8: To solve problems in traffic by using analytical and / or graphical methods.	
2.4. Expected learning outcomes on the course level	**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.*
	1. demonstrate knowledge and understanding of the content of the course by defining and describing basic concepts in the field of road vehicle exploitation,	1, 1
	2. distinguish between the performance and analyze the vehicle components and assemblies,	2, 4
	3. review and analyze the reliability of the vehicle,	5, 4
	4. draw and comment on the impact of exploitation on the life of the vehicle,	4, 4
	5. to comment on the impact of the road profile and tires on driving safety,	4
	6. Present the acquired knowledge, ideas, problems and solutions independently and in a team.	6

	Constructive allignement					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
2.5. Course content according to detailed curriculum schedule	1.	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
		Division of road vehicles.	1	They listen to a lecture.	At the colloquium or written and oral exam define, recognize and different types of	5 h

					road vehicles. They know how to explain basic concepts, physical quantities and units of measure.	
	2.	Changing the technical condition of the vehicle.	2	They listen to a lecture and read literature. In the exercise classes describe the physical quantities and compare examples of their relationships with each other.	At the colloquium or written and oral examination know enumerate, explain and give examples of changes in the technical condition of the elements of a motor vehicle during the operation.	8 h
	3.	Causes of technical condition change.	4	They listen to a lecture and read literature. In the exercise classes are shown and calculated on examples of different sizes of measurement units (ISO systems).	At the colloquium or the written and oral exam they know how to relate the causes and consequences of exploitation to changes in the technical condition of the vehicle as a whole and of elements, assemblies as parts of the vehicle.	8 h
	4.	Wear, friction (dry and liquid).	1, 4	They listen to a lecture and read literature. In the exercise classes, tasks in this field are solved with analytical methods.	At the colloquium or the written and oral exam they can define and describe the dry and liquid friction and explain the role of exploitation on the occurrence of wear and cause and effect relationships during the use of motor vehicles.	8 h
	5.	Features of road vehicles.	1, 4	They listen to a lecture and read literature. In the exercise classes, they group motor vehicle parts.	At the colloquium or written and oral exam knows define fundamental features of vehicles. They know how to describe and relate individual factors and their importance in the operation of motor vehicles.	8 h
	6.	Impact of exploitation on the life of the vehicle.	4, 6	They listen to a lecture and read literature.	At the colloquium or written and oral exam know how to use and apply technical data obtained during the operation on the life of the vehicle. Give examples of	8 h

				In the exercise classes sketch and explain the features of Otto and Diesel engines.	interrelationships between different factors on the reliability and life of a vehicle. Repetition of the materials and preparation for the colloquium.	
	7.	Stability and safe driving. Colloquium I.	4	They listen to a lecture and read literature.	At the colloquium or the written and oral examination, they can recognize the traffic conditions and vehicle trajectories and draw conclusions about safe driving during operation based on the factors given.	8 h
	8.	Stability in the curve. Driving mechanics.	1, 6	They listen to a lecture and read literature. In the exercise classes, they sketch and explain the forces on the vehicle as they move, and solve problems in this thematic area by analytical methods.	At the colloquium or the written and oral exam they know how to define, calculate and explain the effect of force systems on vehicles during movement and their influence on the driving mechanism.	8 h
	9.	Influence of roadway profile and vehicle elements on driving safety.	2, 4, 5	They listen to a lecture and read literature. In the exercise classes, tasks in this field are solved with analytical methods.	At the colloquium or the written and oral exam they can define the influencing factors of the elements, parts of the vehicle and to anticipate the effects and consequences of their technical condition on the safe driving of the motor vehicle during operation.	8 h
	10.	Maintenance of road vehicles.	1, 3, 4	They listen to a lecture and read literature. In the exercise classes, they sketch and explain the fault intensity curve.	At the colloquium or the written and oral exam they can define and describe the role of vehicle maintenance for a lifetime. They know how to distinguish and compare different types and types of maintenance and choose the optimal option for the given operating conditions.	8 h

	11.	Vehicle assemblies, engine, coupler.	1, 2, 6	They listen to a lecture and read literature. In the exercise classes, they sketch and explain the various designs of clutches used on motor vehicles.	At the colloquium or written and oral exam knows define, outline and describe the role and operation of the engine and clutch. They know how to choose and explain the choice of vehicle assembly in the contemporary context of the development of vehicle construction and its assemblies.	8 h
	12.	Transmission, differential and drive shaft.	1, 2, 6	They listen to a lecture and read literature. In the exercise classes, they sketch and apply the learned content in the choice of differential type for different types of motor vehicles.	At the colloquium or the written and oral exam they can define and describe the role and mode of operation of the transmission, differentials and drive shaft. They know how to choose and explain the choice of vehicle assembly in the contemporary context of the development of vehicle construction and its assemblies.	8 h
	13.	Diagnostics and diagnostic methods.	1, 2, 6	They listen to a lecture and read literature. In the exercise classes, they sketch and explain the performances of the clutches.	At the colloquium or written and oral exam knows define and describe the role of diagnostic systems and components of vehicles. They are able to interpret the interrelations of structural and diagnostic parameters and to analyze on the basis of the diagnostic parameters the actual state of the vehicle element or assembly (ie structural parameters).	8 h
	14.	Brake system.	1, 2, 6	They listen to a lecture and read literature. In the exercise classes, they sketch, explain the principle of operation and propose brake types for various types of motor vehicles.	At the colloquium or the written and oral exam they know how to define and describe the elements of the vehicle's braking system. They know how to choose individual brake system performance	8 h

					options and present them. Repetition and preparation for the colloquium.	
	15.	Braking system diagnosis. Colloquium II. Concluding considerations.Repeating and preparing for the exam.	1, 2	They listen to a lecture and read literature and prepare individually for the exam.	At the colloquium or the written and oral exam they can define and choose the options for diagnosing the correctness of the braking system. They know from the diagnostic parameters that they have obtained that the braking system can be used.	40 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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 classes 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).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points	Attendance		Written exam	3,5 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	

corresponds to the credit score of the course)	Colloquium	3,5 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	1 (without colloquia)	Other	

3.3. Student workload

Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:

Obligation	***Hours (estimated)***
1. Active class attendance	60
2. Preparing colloquia or exams through individual work	90

4. FORMATION OF GRADES

4.1. Grading of seminar work

-

4.2. Grading of the colloguium / written and oral exam

Bad	**Satisfying**	**Above average**
It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements

Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
	2 points	4 points	7 points	10 points
Examination / Written examination	2	3	4	5
	50-64,9%	65-79,9%	80-89,9%	90-100%
	25 points	30 points	35 points	40 points
Oral part of the exam	2	3	4	5
	25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Zavada J.: Prijevozna sredstva, Fakultet prometnih znanosti, Zagreb, 2000. (selected chapters)	6	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Grupa autora: Tehnika motornih vozila, Pučko otvoreno učilište, Zagreb, 2006. 2. Krpan D.: Motorna vozila, Sveučilište u Zagrebu, Zagreb, 1966. 3. Hillier, V. A. W.: Fundamentals Motor Vehicle Tehnology, Chelenham GL53 ODN, England, 1991.	0 0 0	
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 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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	**ROAD TRANSPORT TECHNOLOGY**	1.8. Course code at ISVU	187604
1.2. Course lecturer	Martina Ljubić Hinić	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45L+30P)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	3rd	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 to: • define elements of road transport technology; • get to know the elements of road transport technology and their interdependence in planning the transport process; • understand the technical and technological characteristics of the elements; • adopt a critical way of concluding in organizing the modern transportation process; • learn and learn the basic principles of road transport technology and organization and the ability to adapt the characteristics of transport requirements to market demands; • apply the learned content of this course in business practice.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the HKO.

2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.
	LO5: Apply basic legal and economic principles in an organization with CSR in technical and technological entities.
	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.
	LO8: Solve traffic problems using analytical and / or graphical methods.
	LO9: Assess and organize processes in the field of road transport and / or transport logistics.
	LO12: Design a smaller transport process and critically evaluate it.
	LO13: Follow trends in technology, technology and traffic safety.
2.4. Expected learning outcomes on the course level	**Learning outcomes according to Bloom's taxonomy:**
	1. to demonstrate knowledge and understanding of course content by defining and describing the basic principles of road transport technology and organization 1, 2. to enumerate and explain the elements of road transport technology 1, 2 3. to distinguish and evaluate the technical and technological characteristics of the elements of road transport technology 3, 6 4. to analyze and compare the characteristics of transportation requirements 4, 2 5. to create a transport process, calculate fleet coefficients and indicators and recommend an optimal solution 5, 3, 6 6. to use materials and tools to search scientific and professional literature in their native and English languages 3 7. to present the acquired knowledge, ideas, problems and solutions independently and in a team 6

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

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

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

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

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

	14.	Logistic concept. 2nd Colloquium.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they describe, state and explain the role of logistics and logistics concept with the aim of establishing an optimal modern transportation process.	26 h
	15.	Concluding considerations. Repeating and preparing for the exam.	6, 7	They listen to a lecture and prepare individually for the exam.	-	30 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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).

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	1	Written exam	1 (without colloquia)	Project	1
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	1 (without written exam)	Seminar paper		Other	
	Class activity	1	Oral exam	1	Other	

3.3. Student workload	Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as: 1. Attendance 45 h 2. Design of seminar work and presentation 30 h 3. Preparation for the mid-term / midterm exam 75 h

4. FORMATION OF GRADES

4.1. Grading of seminar work

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.
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.

4.2. Grading of the colloguium / written and oral exam

Bad	Satisfying	Above average
It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions

				that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		0 points	0 points	0 points	0 points
	Seminar paper	2	3	4	5
		Made and handed over	Made and handed over	Made and handed over	Made and handed over
	Examination / Written examination	2	3	4	5
		50-64%	65-80%	81-90%	91-100%
		25-32 points	33-40 points	41-45 points	46-50 points
	Oral part of the exam	2	3	5	5
		25-32 points	33-40 points	41-45 points	46-50 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	1. Županović, I.: Tehnologija cestovnog prijevoza, FPZ, Zagreb, 2002. (selected chapters)	3	No
5.2. Supplementary literature (at the time of the submission of	1. Baričević, H.: Tehnologija kopnenog prometa, PFR, Rijeka, 2001. 2. Ortuzar, J. de D., Willumsen, L.G. : Modelling Transport, John Wiley & Sons, United Kingdom, 2011.	3 0	No Yes

changes and / or additions to the study program)	3. Lectures		
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 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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course title	**TRAFFIC TECHNIQUE**	1.8. Course code at ISVU	187605
1.2. Course lecturer	Martina Ljubić Hinić	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional study of Transport	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	3rd	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 to: • define road safety factors; • know the lawfulness of traffic management; • understand traffic supply and demand issues; • learn to identify traffic flow problems so that they can contribute independently to solving problems; • 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 HKO.
2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.

	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.
	LO4: Apply knowledge of natural and technical sciences to problems in the field of road transport.
	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.
	LO7: Apply computer tools for data analysis and comparison, and propose an optimal solution in the traffic process.
	LO10: Compare and select technical and technological solutions for traffic and / or goods flows.
	LO13: Follow trends in technology, technology and traffic safety.
2.4. Expected learning outcomes on the course level	**Learning outcomes according to Bloom's taxonomy:**
	1. to demonstrate knowledge and understanding of course content by defining and describing the basic principles of traffic flow 1, 1 2. to enumerate and explain the factors of road safety, their role and significance in traffic flow 1, 2 3. to analyze and compare traffic supply and demand relationships and recommend problem solving methods 4, 2 4. to analyze the example of traffic conflict and propose measures to increase traffic safety 4, 5 5. to comment on and critically evaluate the causes of conflicts in traffic flows 4, 5 6. to use materials and tools to search scientific and professional literature in their native and English languages 3 7. to present the acquired knowledge, ideas, problems and solutions independently and in a team 6

	Constructive allignement					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
2.5. Course content according to detailed curriculum schedule		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
		Traffic safety factors.	1, 2, 7	Listen to lectures and read literature.	In colloquium or the written and oral exam they define the factors of traffic safety. They describe the role and importance of factors for the safe and undisturbed flow of traffic flows.	3 h

		Human as a factor in traffic safety.	1, 2, 4, 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 enumerate and describe the characteristics, characteristics and behaviors of a person which are necessary for the safe operation of the vehicle and therefore the traffic flows.	4 h
		Human as a factor in traffic safety.	1, 2, 4, 5, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they enumerate and describe the characteristics, characteristics and behaviors of a person which are necessary for the safe operation of the vehicle. In colloquium or written and oral exams they can state and describe the active and passive elements of vehicle safety.	4 h
		Vehicle as a factor in traffic safety.	1, 2, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system	4 h
		Vehicle as a factor in traffic safety.	1, 2, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system, as well as define what is the road and describe the elements of road safety, and analyze and conclude how the proper	4 h

					maintenance of the road affects the traffic system.	
		Road as a factor in traffic safety.	1, 2, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they can enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system, define what is the road and describe the elements of road safety, and analyze and conclude how the proper maintenance of the road affects the traffic system.	4 h
		Road traffic and Incident factor.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and describe conflict situations in road traffic, and analyze the impact of improper traffic management on the safety of all participants. They know how to list incident factors and explain their impact on traffic.	4 h
		Road design elements. 1st Colloquium	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they define and describe the elements of road design and their role in guiding the flow.	34 h
		Traffic counting and planning (fieldwork).	1, 3, 4, 5, 6, 7	AT the fieldwork in group work, they investigate and solve a case study.	In colloquium or written and oral exams they define and describe traffic counting methods and their role in traffic flow planning. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic flows.	9 h
		Parking lots and garages. Road and tunnel lighting.	1, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar,	In colloquium or written and oral exams they define and describe the importance of	4 h

				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.	stationary traffic in the transport system of populated areas. They know how to define and describe the types and ways of installing lighting on traffic structures, and compare the characteristics and express the advantages and disadvantages of different types of traffic lighting. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic flows.	
		Adherence coefficient. Vehicle stability. Horizontal and vertical transparency.	1, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and describe the characteristics of vehicles and roads that influence the best adhesion of the vehicle to the ground in order to maximize the stability of the vehicle when moving, and define and explain what factors reduce and increase visibility for road users. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic flows.	4 h
		Safety clearance between vehicles in motion. Braking path. The way to react.	1, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and describe the elements of the safety gap between different modes of traffic on the roads, and define and describe the basic concepts and elements necessary to determine the length of the braking and response times and propose measures for	4 h

					improvement. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic	
		Traffic signalization.	1, 2, 3, 4, 5, 6, 7	They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems.	In colloquium or written and oral exams they define and list types of traffic signs and describe their characteristics. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic flows.	4 h
		Traffic lighting device management. Pedestrian signals. 2nd Colloquium.	1,2, 3,4, 5, 6, 7, 8, 9	They listen to a lecture and prepare individually for the colloquium.	In colloquium or written and oral exams they describe and specify ways to control the light signaling, define the types and cycles of light signaling for pedestrians and vehicles.	34 h
		Concluding considerations. Repeating and preparing for the exam.	6, 7	They listen to a lecture and prepare individually for the exam.	-	34 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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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).					
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	1	Written exam	1 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	1 (without written exam)	Seminar paper	1	Other	
	Class activity	1	Oral exam	1	Other	
3.3. Student workload	Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as: 1. Attendance 45 h 2. Design of seminar work and presentation 15 h 3. Preparation for the mid-term / midterm exam 90 h					

4. FORMATION OF GRADES

	Element of evaluation	Bad	Satisfying	Above average
4.1. Grading of seminar work	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.
	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.

4.2. Grading of the colloguium / written and oral exam	**Bad**	**Satisfying**	**Above average**
	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements					
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		0 points	0 points	0 points	0 points
	Seminar paper	2	3	4	5
		Made and handed over	Made and handed over	Made and handed over	Made and handed over
	Examination / Written examination	2	3	4	5
		50-64%	65-80%	81-90%	91-100%
		25-32 points	33-40 points	41-45 points	46-50 points
	Oral part of the exam	2	3	5	5
		25-32 points	33-40 points	41-45 points	46-50 points

4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
	90 – 100%	5 (excellent)	A

	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	Cerovac, V.: Tehnika i sigurnost prometa; FPZ, Zagreb, 2001. (selected chapters)	2	Yes
	Zakon o sigurnosti prometa na cestama		Available on-line
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	McShane, W.R. Roess, R.P., Prassas, E.S.: Traffic engineering, Prentice Hall, 1998. Suvremeni promet; časopis Hrvatskog znanstvenog društva za promet, Zagreb. Lectures	0 1	Yes 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 Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Danijel Mileta	1.8. Course code in ISVU	142540
1.2. Course title	**INFORMATION SYSTEMS IN ROAD TRAFFIC**	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 + 15 + 0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	6
1.6. Year of study	3rd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The main objective of the course is to acquaint students with information systems as well as telecommunication and information infrastructure in the function of road traffic, and the benefits they provide.		
2.2. Terms of course entry and required competences	Enrolled 3nd academic year, 4 year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	IU1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English. IUx: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders. IU3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions. IU4: Apply knowledge of natural and technical sciences to road transport problems. IU6: Analyze and interpret relevant road transport facts needed to reach conclusions. IU11: Identify, anticipate and propose a road transport technology and technique solution. IU13: Follow trends in technology, technology and traffic safety		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Categorize intelligent transport systems and technologies that use them and analyze their benefits.	4
	2. Compare different information and intelligent transport systems.	4
	3. Critically evaluate and evaluate the best system to use.	5
	4. Propose and properly present a solution for a problematic location or purpose	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introduction to the course and a detailed teaching plan.	-	Students listen to a lecture. On the computer, they are introduced to the course content and documents on the e-learning course page.	-	2 h
2.	Basics	1	Students listen to a lecture and read literature.	At the midterm, written and oral exam they can define, describe and categorize the basic concepts of information systems in road transport and set an example.	2 h
3.	ITS	1,2,3,4	Students listen to a lecture and read literature.	They can enumerate, distinguish and give an example of intelligent	3 h

					transport systems at the midterm, written and oral exam.	
	4.	Internet and intranet	2,4	Students listen to a lecture and read literature.	At the colloquium, written and oral exam they can define, describe and enumerate basic terms in the domain of Internet, intranet and extranet, and give an example.	3 h
	5.	Wireless data transmission	1,2,3,4	Students listen to a lecture and read literature.	At the midterm, written and oral exam they can define, describe and enumerate wireless data transfer for different technologies, and critically evaluate and evaluate the best technology to use.	4 h
	6.	ERP	1,2	Students listen to a lecture and read literature.	At the colloquium, written and oral exam they can define and describe the information system in business and the concepts related to it.	3 h
	7.	Repetition of materials / colloquium	1,2,3,4	Students listen to a lecture and read literature.	They know the matter from thematic units 2-6. At the colloquium, the written and the oral exam they know how to define parking payment systems.	2 h
	8.	Parking Billing Systems	1,2,3,4	Students listen to a lecture and read literature.	At the colloquium, written and oral exam they can define, describe, categorize, compare, judge and evaluate parking charging systems in open and ramp-regulated parking lots.	3 h
	9.	Highway billing systems	1,2,3,4	Students listen to a lecture and read literature.	At the midterm, written and oral exam they know how to define, describe,	1 h

					categorize, compare, judge and evaluate highway billing systems.	
	10.	Autopilot	1,2,3	Students listen to a lecture and read literature.	At the colloquium or the written and oral exam they can define and describe the features of autopilot in cars and the technologies used in it.	2 h
	11.	Fleet management	1,2,3,4	Students listen to a lecture and read literature.	At the colloquium or the written and oral exam they can define and describe the basic elements of fleet management and critically evaluate, evaluate and propose the right solution for a particular need.	2 h
	12.	Speedometers on roads	1,2,3,4	Students listen to a lecture and read literature.	They can define, describe and categorize road speed measuring devices at the midterm or the written and oral exam.	1 h
	13.	Seminars	1,2,3,4	Students listen to a lecture and read literature. They use multimedia and networking. 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.	In defense of seminar paper, they are able to define and describe basic concepts in the topic of seminar paper, to distinguish and compare similar technologies, to give an example, to critically judge, evaluate and propose the use of technology in question.	6 h

	14.	Seminars	1,2,3,4	Students 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.	In defense of seminar paper, they are able to define and describe basic concepts in the topic of seminar paper, to distinguish and compare similar technologies, to give an example, to critically judge, evaluate and propose the use of the technology in question.	9 h
	15.	Repetition of materials / 2. colloquium	1,2,3,4		They know the subject matter from topics 8-12. and domain of seminar papers.	2 h

4. EVALUATION OF STUDENT WORK

3.1. Student 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS	Attending classes	1	Written exam	1 (without colloqiums)	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	

credits corresponds to the course credit value)	Teaching activities		The oral part of exam	0,5	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as attendance (60 hours), preparation of seminar work and presentation (16 hours), preparation for the midterm/exam through self-study (44 hours).					
4. FORMATION OF STUDENT GRADE						
4.1. Evaluation of seminar paper	**Elements 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.	
	Terminolog, writing style	Words and expressions are not 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.	
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**	
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and	

	or explain the contents of the course with examples.			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	0-69,9% attendance	70-79,9% attendance	80-89,9% attendance	90-100% attendance
		0 points	5 points	7 points	10 points
	Seminar paper	2	3	4	5
		15 points	20 points	25 points	30 points
	Colloquiums/ Written part of exam	2	3	4	5
		50 - 64,9%	65 - 79,9%	80 - 89,9%	90 - 100%
		15 points	20 points	25 points	30 points
	Oral part of exam	2	3	4	5
		15 points	20 points	25 points	30 points
4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)		Numerical grade		ECTS grade
	90 – 100%		5 (excellent)		A
	80 – 89,9%		4 (very good)		B
	65 – 79,9%		3 (good)		C
	60 – 64,9%		2 (sufficient)		D
	50 – 59,9%		2 (sufficient)		E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	1. Bošnjak I.: Inteligentni transportni sustavi (odabrana poglavlja)	3	
	1. Mileta D.: Elektroničko poslovanje (odabrana poglavlja)		on-line

5.2. Additional literature (at the moment of changes and/or amended of study programme)			
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	
1.2. Course title	**TRANSPORT GEOGRAPHY**	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 + 15 + 0)
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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	3rd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	The goal is that students on the basis of theoretical knowledge and case studies: ▪ become familiar with the creation and development of all transport modes, ▪ analyze and comment on the progress of commodity exchange in the world, ▪ distinguish main transport corridors in Europe, North America, and Asia.		
2.2. Terms of course entry and required competences	Enrolled 3rd academic year, passed the course "Traffic corridors and merchandise flows", 4 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 for decision making. LO6: Analyze and present relevant facts from the traffic area required to reach conclusions. LO10: Compare and select technical and technological solutions for traffic and/or goods flows. LO12: Design a smaller transport process and critically evaluate it.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. Present and comment on the historical development of the traffic branches.	6, 3
	2. List and explain the main factors for the creation and development of commodity flows.	1, 2
	3. Analyze and evaluate world trade in goods.	4, 5
	4. Present and comment on the traffic connections of the countries in Western, Central and Eastern Europe.	6, 4
	5. List and compare major transport corridors in Asia, North America, and Europe.	1, 2
	6. Comment on the objective and strategy of the Marco Polo Program and the current EU Transport White Paper.	4
	7. Use materials and tools to search scientific and professional literature in native and English languages.	3
	8. Present the acquired knowledge, ideas, problems, and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introductory presentation (introducing students to the course content and obligations)	**-**	Listening to the lecture. In the course of seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer.	-	**2 h**
2.	Development of transport branches throughout history (road, rail, pipeline)	**1, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic	At the colloquium or written and oral exam students can present, comment and evaluate the	**3 h**

				area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	historical development of road, rail and pipelines. Seminar paper created and presented (by computer programs).	
	3.	Development of transport branches throughout history (water, air, postal and telecommunication)	**1, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or written and oral exam students can present, comment and evaluate the historical development of water, air and postal and telecommunications traffic. Seminar paper created and presented (by computer programs).	**3 h**
	4.	Development of transport branches throughout history (video films)	**1, 7, 8**	They use multimedia and network. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam students can present maritime and airports in the world. Analyze and evaluate the role of rail transport. Describe the course of highway construction. Seminar paper created and presented (by computer programs).	**3 h**

	5.	Factors for the formation of traffic flows (general, natural, social, economic)	**1, 2, 7, 8,**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students know how to define, enumerate and distinguish the main factors for the formation and development of commodity flows (general, natural and socio-economic factors). Identify the abbreviations of economic groups of the world. Seminar paper created and presented (by computer programs).	**4 h**
	6.	Geographical location of transport corridors in Western Europe	**4, 5, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the term traffic corridor. List and compare major transport corridors in Western Europe (Germany, UK, Benelux, France, Spain) of all branches of transport. List the countries through which each transport corridor passes. Seminar paper created and presented (by computer programs).	**3 h**
	7.	Geographical location of transport corridors in Central and Eastern Europe	**4, 5, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, 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 define the term traffic corridor. List and compare major transport corridors in Poland, Czech Republic, Slovakia, Hungary,	**3 h**

				knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	Croatia, Bulgaria, Romania, Serbia, Greece, and Russia of all branches of transport. List the countries through which each transport corridor passes. Seminar paper created and presented (by computer programs).	
	8.	Geographical location of North American transport corridors	**4, 5, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the term traffic corridor. List and compare major traffic corridors of Canada and the United States of all branches of transport. Seminar paper created and presented (by computer programs).	**3 h**
	9.	Geographic location of traffic corridors in Asia	**4, 5, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the term traffic corridor. List and compare major transport corridors in East and South Asia (China, Japan, South Korea, Singapore) of all branches of transport. List the countries through which each transport corridor passes. Seminar paper	**3 h**

					created and presented (by computer programs).	
	10.	Spatial distribution of food flows (meat, fruits and vegetables, cereals)	**2, 3, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students know how to define the concept of traffic flow. Categorize, analyze and evaluate the trade in fruits and vegetables, milk and dairy products, meat, fish in the World. List the countries with the largest importers and exporters of all types of food. Seminar paper created and presented (by computer programs).	**4 h**
	11.	Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore)	**2, 3, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students know how to define the concept of goods traffic. Categorize, analyze and evaluate the world trade of oil, petroleum products, cotton, bauxite, iron ore, and natural gas. List the countries with the largest importers and exporters of all types of raw materials. Seminar paper created and presented (by computer programs).	**4 h**
	12.	Spatial distribution of industrial product flows (cars, machines, electronics, ships)	**2, 3, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic	At the colloquium or the written and oral exam, students know how to define the concept of	**4 h**

				area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	goods traffic. Categorize, analyze and evaluate the progress of trade in cars, electronic products, ships, machines in the World. List the countries with the largest importers and exporters of industrial products. Seminar paper created and presented (by computer programs).	
	13.	Marco Polo Program (program objective, program activities, program projects)	**6, 7, 8**	They listen to a course lecture and read literature. They use multimedia and networkAt the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, students can define the goal and strategy of the Marco Polo program. Distinguish activities Marco Polo. Critically evaluate the professional video films program. Seminar paper created and presented (by computer programs).	**3 h**
	14.	European Union White Paper on Transport (White Paper titles, key content areas, preparing the European transport area for the future, visions for developing a competitive and sustainable transport system, strategy - what needs to be done)	**6, 7, 8**	They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In group work at the seminar teaching, the brainstorming	At the colloquium or written and oral exem, students know how to define the objective and strategy of the current EU White Paper on transport. Comment on EU professional projects in the field of transport. Seminar paper created and presented (by computer programs).	**3 h**

				method and the discussion method on the topic are applied.		
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	**45 h**

3. EVALUATION OF STUDENT WORK						
3.1. Student 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written 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 (enter the share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Attending classes	0,5	Written exam	1 (without colloqiums)	Project	
	Experimental work		Research		Practical work	
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
	Teaching activities	0,5	The oral part of exam	0,5	(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit for 30 semester hours and is assessed as attendance (30 hours), preparation of seminar work and presentation (15 hours), preparation for the midterm/exam through self-study (45 hours).					

4. FORMATION OF STUDENT GRADE				
4.1. Evaluation of seminar paper	**Elements 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.

	Terminolog, writing style	Words and expressions are not 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.
4.2. Gradeing of the colloquium/written and oral exam	**Bad**		**Satisfying**		**Above average**
	It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply or explain the contents of the course with examples.		It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.
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
	Oral part of exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Sego Darijo: Traffic corridors and merchandise flows, Script for internal use, Polytechnic of Sibenik, Sibenik 2016.		e-learning system
	World trade organization http://www.wto.org/ (selected chapters)	-	Internet website
	Transport in EU http://ec.europa.eu/transport/index_en.htm (selected chapters)	-	Internet website
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of Sibenik for the mentioned course. International trade statistics https://www.trademap.org/Index.aspx UN agency for food http://www.fao.org/home/en/	-	e-learning system Internet website Internet website
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey,		

	monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

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

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

2. COURSE DESCRIPTION	
2.1. Course objectives	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; qualification level 4.2 according to the HKO.
2.3. Learning outcomes on the study programme level	LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English.
	LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders.
	LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions.

	LO6: Analyze and interpret relevant road transport facts needed to reach conclusions.	
2.4. Expected learning outcomes on the course level	**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.*
	1. demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts in transport and tourism,	1, 1
	2. to analyze and compare the transport sectors in the tourism industry,	4, 2
	3. propose a form of tourist transport as part of a tourism product,	6
	4. use materials and tools to search scientific and professional literature in their native and English languages,	3
	5. Present the acquired knowledge, ideas and solutions independently and in a team.	6

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

					cite and explain the elements of production of transport products.	
	2.	Interdependence of transport and tourism.	1	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam, they can enumerate and explain ways of influencing tourism on traffic and explaining the impact of traffic on tourism. Explain the limiting impact of transport on tourism and tourism on transport. Define transport service and tourism product. Explain the transport service as a tourism product and give an example of the absence of a transport service in a tourism product. List and explain the categories of users of tourist trips and motives for traveling. Define and explain tourism as a system.	6 h
	3.	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
	4.	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	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	6 h

				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.	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).	
	5.	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 explain the panoramic transport by rail in a limited area of the tourist destination. Define cable cars and funiculars and give an example of their use in tourist destinations. Explain nautical tourism and list its parts. Give an example of river-lake-canal round-trip cruises. Seminar paper created and presented (using computer programs independently).	6 h
	6.	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

	7.	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
	8.	Air traffic as part of a tourist product, charter travel. Colloquium I.	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 the history of air traffic and define tourist services based on air traffic. Comment on the role of air transport in tourism in the Republic of Croatia. Find out the difference between regular and charter air traffic.	5 h
	9.	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	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

				teaching, the brainstorming method and the discussion method on the topic are applied.		
	10.	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
	11.	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
	12.	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	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	5 h

				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.	branches. Seminar paper created and presented (using computer programs independently).	
	13.	Economics of Exploitation of Traffic Vehicles and Traffic Infrastructure.	1, 2, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can define and list the types of oscillations. Explain measures to mitigate the effects of oscillations. Seminar paper created and presented (using computer programs independently).	5 h
	14.	Parking in tourist destinations. Colloquium II.	1, 4, 5	They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or written and oral exam knows define basic terms of parking and differentiate ways of parking in tourist destinations.	3 h
	15.	Concluding considerations.		They listen to a lecture and prepare individually for the exam.	-	17h

		Repeating and preparing for the exam.				

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 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 F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written 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).					
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		Written exam	1,5 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	1,5 (without written exam)	Seminar paper	0,5	Other	
	Class activity	0,5	Oral exam	0,5	Other	

3.3. Student workload

Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as:

	Obligation	***Hours (estimated)***
1.	Active class attendance	45
2.	Designing a seminar paper and presentation	10

	3. Preparing colloquia or exams through individual work	35

4. FORMATION OF GRADES

4.1. Evaluation of a of seminar work	**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.
	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.

4.2. Grading of the colloguium / written and oral exam	**Bad**	**Satisfying**	**Above average**

	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material.

4.3. Forming the final grade according to the evaluation elements					
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved
		2 points	4 points	7 points	10 points
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral part of the exam	2	3	4	5
		25 points	30 points	35 points	40 points

4.4. Formation of final grade based on absolute distribution		
Percentage of acquired knowledge, skills and competences (teaching + final exam)	Number rating	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (sufficient)	D
50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ON THE SUBJECT

	Title	Number of copies in the library	Availability via other media

5.1. Required literature (available in the library and through other media)	1. Mrnjavac E.: Promet u turizmu, Fakultet za turistički i hotelski menadžment, Opatija, 2006. (selected chapters)	5	
	2. Maršanić R.: Parkiranje u turističkim destinacijama, IQPLUS d.o.o., Rijeka 2008.	5	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	1. Baričević H.: Promet u turizmu, Visoka škola za turizam, Šibenik, 2003. 2. 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 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).		

VELEUČILIŠTE u ŠIBENIKU

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

1. GENERAL INFORMATION			
1.1. Course lecturer	Darijo Šego	1.8. Course code in ISVU	142747
1.2. Course title	**SEMESTRAL PROFESSIONAL PRACTICE**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	-
1.4. Study programme (specialist, undergraduate, graduate)	Undergraduate professional 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)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	3rd	1.13. Modernization	Yes
1.7. Credit score (ECTS)	13	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 for students to know from theoretical knowledge and case studies: ▪ enumerate and explain jobs in transport companies, ▪ categorize services provided by transport companies, ▪ critically evaluate the business situation of transport companies, ▪ to compare business processes in different or similar companies engaged in transport activities, ▪ propose the best business process improvement solutions.		
2.2. Terms of course entry and required competences	Enrolled 3rd academic year, tested VI. semester of the current academic year		
2.3. Learning outcomes on the study programme level	IU1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English. IU3: Independently and responsibly search, interpret and integrate relevant literature for decision making. IU6: Analyze and present relevant facts from the field of study required to reach conclusions.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	**Learning outcomes** by Bloom: (maximum 2 werbs for LO)	**Level of LO**: *1 - memory,* *2 - understanding,* *3 - application,* *4 - analysis,* *5 - evaluation,* *6 – synthesis.*
	1. To combine acquired theoretical knowledge from the course and practical knowledge from a company engaged in transport.	4
	2. Enumerate and explain the affairs of a company engaged in transport.	1, 2
	3. Analyze and critically evaluate the existing business situation of a transport company.	4, 5
	4. Present the company and the acquired knowledge from the company engaged in the transport industry.	6
	5. Use materials and tools to search scientific and professional literature in native and English languages.	3
	6. To propose and choose the best solution for improving the business processes of a transport company.	6, 5

2.5. Course content according to detailed curriculum schedule

Constructive allignement

No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1.	Introductory presentation (introducing students to the course content and obligations).	-			**5 h**
2.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes,	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**

				basic and additional services provided by the company, administration.		
	3.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes, basic and additional services provided by the company, administration.	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**
	4.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes, basic and additional services provided by the company, administration.	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**
	5.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes, basic and additional services provided by the company, administration.	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**
	6.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes, basic and additional services provided by the company, administration.	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**

	7.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes, basic and additional services provided by the company, administration.	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**
	8.	Execution of the Semester professional practice in a company with which the Polytechnic of Šibenik has signed the Agreement on professional cooperation.	**1, 2, 3, 4, 5, 6**	Students are introduced to the company's general information and construction facilities. Perform tasks related to vehicle fleet, vehicle and road maintenance, transport organization, business processes, basic and additional services provided by the company, administration.	Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**
	9.	Final consideration	-		Developed and presented seminar paper on the company where the Semester professional practice was performed (using computer programs).	**55 h**

3. EVALUATION OF STUDENT WORK

3.1. Student obligations	In accordance with the Rulebook on Study and the Rulebook on Assessment and Evaluation of Student Work: students are obliged to perform a Semester Professional Practice in accordance with the signed Agreement on Professional Cooperation between the Polytechnic of Šibenik and a company performing activities in the field of transport. Based on the completed Semester Professional Practice, the student prepares and presents a seminar paper. Seminar paper is brought to the course lecturer for review by students. The course lecturer of the Semester Professional Practice evaluates the seminar paper and presentation as satisfied or dissatisfied. Students who are already employed in companies that are involved in the field of transport are exempted from the Semester Professional Practice (they need to bring a copy of the employment contract as proof of employment), they are not obliged to produce and present seminar work.					
3.2. Student work monitoring (enter the	Attending classes		Written exam		Project	
	Experimental work		Research		Practical work	

share of ECTS credits for each activity so that the total number of ECTS credits corresponds to the course credit value)	Esaay		Report		Continuous check	
	Colloquiums		Seminar paper	2	Semestral Professional Practice	11
	Teaching activities		The oral part of exam		(other)	
3.3. Student work-load	Student workload on all bases is 1 ECTS credit 30 hours of work per semester and is estimated as going to the company of implementation of the Semester Professional Practice in accordance with the signed Agreement on Professional Cooperation between the Polytechnic of Šibenik and the company performing activities in the field of transport (330 hours), preparation of seminar work and presentation on the company of execution of Semester Professional Practice (60 hours).					

4. FORMATION OF STUDENT GRADE				
	Elements of evaluation	**Bad**	**Satisfying**	**Above average**
4.1. Evaluation of seminar paper	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.
	Terminolog, writing style	Words and expressions are not 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.

4.3. Forming the final grade according to the evaluation elements					
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	The oral part of exem	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Formation of the final grade based on the absolute distribution	Percentage of acquired knowledge, skills and competencies (teaching + final exam)	Numerical grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Company websites where students have completed the Semester Professional Practice.		Internet website
	Obtained materials from the company where they performed the Semester Professional Practice.		Company internal materials
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Professional websites in native and foreign languages in the field of transport activity where the Semester Professional Practice was performed.		Internet website
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey,		

	monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the course lecturer	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 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 name@vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

Curriculum for the Undergraduate Professional Study of Traffic at the Polytechnic of Sibenik for the academic year 2019/2020. was adopted at the 9th electronic session of the Traffic Department Council, held on Thursday, October 10, 2019.

Curriculum for the Undergraduate Professional Study of the Traffic at the Polytechnic of Sibenik for the academic year 2019/2020. was confirmed at the 2nd session of the Expert Council of the Polytechnic of Sibenik, which was held on Wednesday 04 December 2019.

Curriculum for the Undergraduate Professional Study of Traffic at the Polytechnic of Sibenik for the academic year 20192020 will be published on the official website of the Polytechnic of Sibenik (http://www.vus.hr/).

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Šibenik, 04.12.2019.

Head of Undergraduate professional study of Traffic
Ivana Beljo, sc. ing. mat., senior lecturer

VELEUČILIŠTE U ŠIBENIKU

Dean of Polytechnic of Sibenik
Ph.D. Ljubo Runjić, senior lecturer