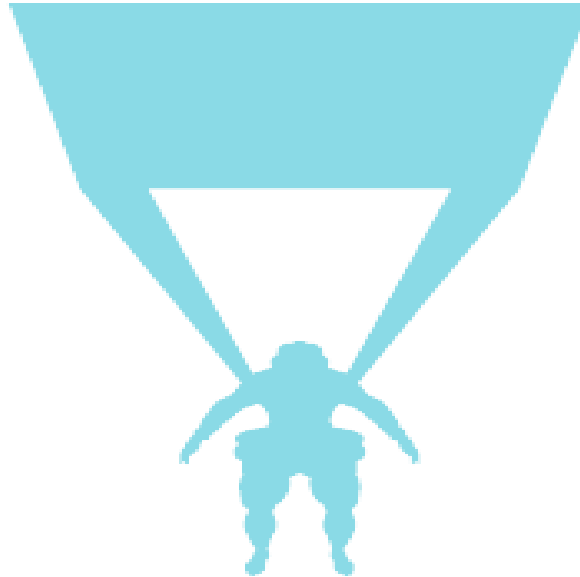


**ŠIBENIK UNIVERSITY OF APPLIED SCIENCES
DEPARTMENT OF TRAFFIC STUDIES
PROFESSIONAL UNDERGRADUATE STUDY
OF TRAFFIC**

Andrije Hebranga Square 11
22000 Šibenik



Šibenik, July 2025.

**ŠIBENIK UNIVERSITY OF APPLIED SCIENCES
DEPARTMENT OF TRAFFIC STUDIES
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Andrije Hebranga Square 11
22000 Šibenik

STUDIES CURRICULUM

ACADEMIC YEAR 2025./2026.

DIRECTION: ROAD TRAFFIC

Šibenik, July 2025.

Department of Traffic Studies at Šibenik University of Applied Sciences performs Professional undergraduate study of Traffic, directions Road Traffic.

Study 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 30 ECTS credits by semester, that is 60 ECTS credits per year, in accordance with the Šibenik University of Applied Sciences Study Regulations.

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 Šibenik University of Applied Sciences. 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 enrolls 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 ISVU system 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.

Completion of studies

Department of Traffic Studies, the Professional undergraduate study of Traffic, direction Road Traffic Šibenik University of Applied Sciences ends with the passing of all exams of enrolled subjects, the fulfillment of other obligations, and the preparation and defense of the Bachelor Thesis. Before submitting the Bachelor Thesis for assessment and defense, the student must pass all courses and achieve a minimum of 170 ECTS credits.

All information about the Department of Traffic Studies you can see on the official website of the Šibenik University of Applied Sciences

https://www.vus.hr/en/study_programmes/undergraduate_professional_study/traffic

Good luck studying at the Department of Traffic Studies and have a pleasant stay at the Šibenik University of Applied Sciences.

1. REQUIREMENTS AND RESULTS OF THE STUDY PROGRAM

Study programme at Department of Traffic Studies, Professional undergraduate study of Traffic, direction Road Traffic Šibenik University of Applied Sciences is oriented towards the professional requirements of a bachelor's degree in road traffic engineering. The study provides education on the organization and management of processes in the field of road traffic, aiming to achieve optimal technical, technological, legal, and economic solutions while protecting the environment.

Students at the level of the study program acquire **general** and **professional competencies**.

The general competences that the student acquires by completing the studies are the ability to analyze and evaluate proposed traffic solutions, connect knowledge from different areas of road traffic, decision-making, teamwork and communication skills, organizational skills, numerical and IT literacy, acquiring responsibility and conscientiousness at work, and behaving in accordance with ethical principles.

The professional competencies that the student acquires are theoretical and practical knowledge and skills necessary for the analysis and evaluation of technical and technological solutions for road transport, the application of computer tools in analyzing and comparing data to propose an optimal solution in the transport process, the evaluation and organization of processes in the field of road transport and transport logistics, the application of basic legal and economic principles in the organization of socially responsible business in technical and technological entities, and monitoring trends in the development of technique, technology, and transport safety.

Study programme at the Department of Traffic studies, The Professional undergraduate study of Traffic, direction Road Traffic consists of six (VI.) semesters.

After completion undergraduate study programme at the Department of Traffic Studies Šibenik University of Applied Science, the areas of employment for undergraduate graduate students are: driving schools, freight forwarding and shipping, logistics centers, vehicle technical inspections, public city transport, parking lot management companies, fleet management companies, road maintenance companies, public local, regional and state administration and institutions.

After completing their studies, undergraduate graduate students have the option of continuing their studies at related graduate studies in the Republic of Croatia or further training within the Ministry of Defense (Croatian Army) and the Ministry of the Interior (Police).

2. EXPECTED LEARNING OUTCOMES

Learning Outcomes (LO) from study programme at the Department of Traffic Studies, Professional undergraduate study of Traffic, direction Road Traffic Šibenik University of Applied Sciences in the academic year 2025./2026. are:

- 1.** Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English,
- 2.** Critically assess the opinions and attitudes of stakeholders in teamwork,
- 3.** Independently and responsibly analyze the relevant literature necessary for decision-making,
- 4.** Apply knowledge from the field of natural and technical sciences to problems in the field of road transport,
- 5.** Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities,
- 6.** Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions,
- 7.** Apply computer tools for analyzing and comparing data,
- 8.** Propose an optimal solution in the field of road transport using relevant literature and computer programs,
- 9.** Solve problems in the field of road transport using analytical methods,
- 10.** Organize the transport process in the field of road transport,
- 11.** Choose technical and technological solutions when carrying out traffic and/or goods flows,
- 12.** Critically assess the organized transport process,
- 13.** Monitor trends in the development of technology, techniques, and road transport safety.

3. LIST OF TEACHING STAFF WHO PERFORM LESSONS (LECTURES, SEMINARS, EXERCISES)

Dear Students at the Department of Traffic Studies, Professional Undergraduate Study of Traffic, direction Road Traffic Šibenik University of Applied Sciences, in the table below you can see a list of the entire teaching staff who perform lessons during all study years. By the subsequent and special decision of the Council Department, Council, and Dean of the Šibenik University of Applied Sciences it is possible to change the teaching staff on a particular course during the study of the year.

NAME AND SURNAME OF THE TEACHING STAFF	COURSE NAME	CONTACT E-MAIL	CONSULTATION
<i>Employees of the Šibenik University of Applied Sciences who perform lessons</i>			
PhD Ana PERIŠIĆ, college professor	Operational research in traffic Statistics in traffic	ana.sisak@vus.hr	Cabinet 24
PhD Ana-Mari POLJIČAK, senior lecturer	Freight-distributional centres and terminals (<i>the course will not be offered in the academic year 2025/2026.</i>) Internal transport and storage Modern traffic systems Resources of road traffic Safety and protection of transport processes Traffic in tourism Transshipment resources	ana.jankovic@vus.hr	Cabinet 21
Darijo ŠEGO, univ. spec. traff., senior lecturer Head of the Department	Infrastructures of road traffic Logistics and supply chains Modern traffic systems Professional practice Traffic corridors and merchandise flows Traffic logistics Transport geography	darijo.sego@vus.hr	Cabinet 21

PhD Dijana MEČEV, college professor	Economics of traffic Logistic and supply chains	dijana.mecev@vus.hr	Cabinet 3
Ivana BELJO, grad. eng. math., univ. spec. oecc., senior lecturer Vice dean for Education	Mathematics I Mathematics II Operational research in traffic Statistics in traffic	ivana.beljo@vus.hr	Cabinet 24, Office of the Vice Dean for Education
PhD Ivana KARDUM GOLEŠ, college professor Vice Dean for International Cooperation, Scientific and Professional Work	English language I English language II English language III English language IV	ivana.kardumgoles@vus.hr	Cabinet 22, Office of the Vice Dean for for International Cooperation, Scientific and Professional Work
Luka OLIVARI, master of mech., senior lecturer	Basics of mechanical engineering Graphic communications Logistic and supply chains Technical mechanics I Tehnickal mechanics II Theory of vehicle movement	luka.olivari@vus.hr	Cabinet 18
PhD Nikolina GAČINA, senior lecturer	Knowledge of goods	nikolina.gacina@vus.hr	Cabinet 2
MSc Tanja RADIĆ LAKOŠ, senior lecturer	Traffic and ecology	tanja.radiclakos@vus.hr	Cabinet 11
Zvonimir KLARIN, master of comp., lecturer	Informatics	zvonimir.klarin@vus.hr	Cabinet 12
Zvonimir ŠTRKALJ, master of traff., lecturer	Infrastructures of road traffic Traffic technique Technology and organization of public transport	zvonimir.strkalj@vus.hr	Cabinet 21

	Technology and organization of road traffic		
<i>Associates of the Šibenik University of Applied Sciences who perform lessons</i>			
MSc Danijel MILETA, title senior lecturer	Basics of electrical engineering and electronics Information systems in road traffic	danijel.mileta@gmail.com	According to the schedule of lessons
MSc Ivo JURIC, senior lecturer	Resources of road traffic	ijuric@fpz.hr	According to the schedule of lessons
Ivana JARDAS DUVNJAK, professor, title lecturer	English language II English language III English language IV	ivana.jardas.duvnjak@gmail.com	According to the schedule of lessons
PhD Ivan PERONJA, associate professor	Economics of traffic	ivan.peronja@pfst.hr	According to the schedule of lessons
PhD Krešimir NIMAC, title senior lecturer	Traffic law	kresonimac@gmail.com	According to the schedule of lessons
Luca OLIVARI, master of math., title lecturer	Mathematics I Mathematics II	luca.olivari@vus.hr lolivari25@outlook.com	According to the schedule of lessons
PhD Petar Feletar, assistant professor	Traffic geoinformation systems	petar.feletar@fpz.hr	According to the schedule of lessons
PhD Luka VUKIĆ, associate professor	Traffic corridors and merchandise flows	luka.vukic@pfst.hr	According to the schedule of lessons
PhD Marko SLAVULJ, associate professor	Urban mobility	marko.slavulj@fpz.hr	According to the schedule of lessons

PhD Nikola MANDIĆ,
associate professor

Traffic law

nikola.mandic@pfst.hr

According to the
schedule of lessons

4. PLACE OF TEACHING PROCESS

Teaching process at the Department of Traffic Studies, Professional undergraduate study of Traffic, direction Road Traffic is performed at the Šibenik University of Applied Sciences, in the city of Šibenik, at the address Trg Andrije Hebranga 11. In the mentioned location, apart from the service offices, there are 15 lecture halls with a total area of 1320 m².

The lecture halls in which the teaching process takes place, provide optimal conditions in view of the enrolled students. 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 Šibenik University of Applied Sciences 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 internet website <https://www.vus.hr/en>, under the menu "*Lessons Schedule for Students*".

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 Šibenik University of Applied Sciences meets the ratio of the number of students enrolled and the space available for teaching.

5. LIST OF COURSES, TEACHING STAFF, HOURS AND WORKLOAD OF STUDENTS

Department of Traffic Studies, Professional undergraduate study of Traffic, directions: Road traffic - I. STUDY YEAR							
COURSES		TEACHING STAFF		COURSE SCHEDLUE			ECTS credits
Head of course	Name of course	Lectures (L)	Seminars (S) /Excersises (E)	Hours per week (L)	Hours per week (S)	Hours per week (E)	
I. semester							
Beljo Ivana	Mathematics I	Beljo Ivana/ Olivari Luca	Olivari Luca	2	-	2	5
Olivari Luka	Technical mechanics I	Olivari Luka	Olivari Luka	2	-	2	5
Goleš Kardum Ivana	English language I	Goleš Kardum Ivana	Goleš Kardum Ivana	2	-	1	3
Olivari Luka	Graphic communications	Olivari Luka	Olivari Luka	2	-	2	5
Šego Darijo	Modern traffic systems	Šego Darijo/ Poljičak Ana-Mari	Šego Darijo	2	2	-	5
Gaćina Nikolina	Knowledge of goods	Gaćina Nikolina	Gaćina Nikolina	2	1	-	4
Nimac Krešimir	Traffic law	Nimac Krešimir/ Mandić Nikola	Nimac Krešimir	2	1	-	3
II. semester							
Beljo Ivana	Mathematics II	Beljo Ivana/ Olivari Luca	Olivari Luca	2	-	2	5
Olivari Luka	Technical mechanics II	Olivari Luka	Olivari Luka	2	-	2	5
Goleš Kardum Ivana	English language II	Jardas Duvnjak Ivana	Jardas Duvnjak Ivana	2	-	1	3
Klarin Zvonimir	Informatics	Klarin Zvonimir	Klarin Zvonimir	1	-	2	4
Radić Lakoš Tanja	Traffic and ecology	Radić Lakoš Tanja	Radić Lakoš Tanja	2	1	-	4
Šego Darijo	Traffic logistics	Šego Darijo	Šego Darijo	2	2	-	4

Mileta Danijel	Basics of electrical engineering and electronics	Mileta Danijel	Mileta Danijel	2	-	2	5

Department of Traffic Studies, Professional undergraduate study of Traffic, directions: Road traffic - II. STUDY YEAR							
COURSES		TEACHING STAFF		COURSE SCHEDLUE			ECTS credits
Head of course	Name of course	Lectures (L)	Seminars (S) /Excersises (E)	Hours per week (L)	Hours per week (S)	Hours per week (E)	
III. semester							
Beljo Ivana	Operational research in traffic	Beljo Ivana/ Perišić Ana	Beljo Ivana/ Perišić Ana	2	-	1	4
Olivari Luka	Basics of mechanical engineering	Olivari Luka	Olivari Luka	2	-	2	5
Goleš Kardum Ivana	English language III	Jardas Duvnjak Ivana	Jardas Duvnjak Ivana	1	-	2	3
Slavulj Marko	Urban mobility	Slavulj Marko	Slavulj Marko	2	2	-	4
Šego Darijo	Traffic corridors and merchandise flows	Šego Darijo/ Vukić Luka	Šego Darijo	2	2	-	4
Poljičak Ana-Mari	Internal transport and storage	Poljičak Ana-Mari	Poljičak Ana-Mari	2	-	2	5
Šego Darijo	Logistics and supply chains	Šego Darijo/Mečev Dijana/Olivari Luka	Šego Darijo	2	2	-	5
IV. semester							
Beljo Ivana	Statistics in traffic	Beljo Ivana/ Perišić Ana	Beljo Ivana/ Perišić Ana	2	-	2	4
Olivari Luka	Theory of vehicle movement	Olivari Luka	Olivari Luka	2	-	2	4
Kardum Goleš Ivana	English language IV	Jardas Duvnjak Ivana	Jardas Duvnjak Ivana	1	-	2	3

Štrkalj Zvonimir	Technology and organization of public city transport	Štrkalj Zvonimir	Štrkalj Zvonimir	2	2	-	5
Šego Darijo	Infrastructures of road traffic	Šego Darijo/ Štrkalj Zvonimir	Štrkalj Zvonimir	2	2	2	6
Poljičak Ana-Mari	Transshipment resources	Poljičak Ana-Mari	Poljičak Ana-Mari	2	-	2	4
Mečev Dijana	Economics of traffic	Mečev Dijana/ Peronja Ivan	Mečev Dijana	2	1	-	3

Department of Traffic Studies, Professional undergraduate study of Traffic (directions: Road traffic) – III. STUDY YEAR

COURSES		TEACHING STAFF		COURSE SCHEDLUE			ECTS credits
Head of course	Name of course	Lectures (L)	Seminars (S) /Excersises (E)	Hours per week (L)	Hours per week (S)	Hours per week (E)	
V. semester							
Poljičak Ana-Mari	Safety and protection of transport processes	Poljičak Ana-Mari	Poljičak Ana-Mari	2	2	-	5
Jurić Ivo	Resources of road traffic	Jurić Ivo	Jurić Ivo/ Poljičak Ana-Mari	2	-	2	4
Štrkalj Zvonimir	Technology and organization of road traffic	Štrkalj Zvonimir	Štrkalj Zvonimir	2	-	2	6
Štrkalj Zvonimir	Traffic techniques	Štrkalj Zvonimir	Štrkalj Zvonimir	2	2	2	6
Feletar Petar	Traffic geoinformation systems	Feletar Petar	Feletar Petar	2	-	2	4
Mileta Danijel	Information systems in road traffic	Mileta Danijel	Mileta Danijel	2	1	-	3
Šego Darijo	Transport geography*	Šego Darijo	Šego Darijo	2	1	-	3
Poljičak Ana-Mari	Traffic in tourism*	Poljičak Ana-Mari	Poljičak Ana-Mari	2	1	-	3

VI. semester

Šego Darijo	Infrastructures of road traffic	Šego Darijo/ Štrkalj Zvonimir	Šego Darijo	2	2	2	6
Šego Darijo	Professional practice	-	-	-	-	-	15
-	Bachelors thesis	-	-	-	-	-	10

*OPTIONAL COURSE - the student selects one optional courses offered.

6. ACADEMIC CALENDAR

The academic calendar of the Šibenik University of Applied Sciences for the academic year 2025/2026 was adopted at the 9th session of the Šibenik University of Applied Sciences Council, which was held in May 2024.

WINTER SEMESTER:

- **lectures in the winter semester** run from September 29 2025 to December 23 2025, and from January 07 2026 to January 23 2026,
- **winter holidays** run from December 24 2025 to January 06 2026, and in that period the Šibenik University of Applied Sciences will not work with students,
- **additional or/and consultative lectures for part time students** will be held in the terms prescribed by the Decision on the adoption of implementation plans for the study programs in the academic year 2025/2026,
- **the winter regular exam period** runs from January 26 2026 to February 20 2026.

SUMMER SEMESTER:

- **summer semester lectures** run from February 23 2025 to June 05 2026,
- **summer holidays** run from July 20 2026 to August 14 2026, and in that period the Šibenik University of Applied Sciences will not work with students,
- **additional or/and consultative lectures for part time students** will be held in the terms prescribed by the Decision on the adoption of implementation plans for the study programs in the academic year 2025/2026,
- **the summer regular exam period** runs from June 08 2026 to July 03 2026.

AUTUMN EXAM TIME PERIOD:

- **the autumn regular exam period** runs from August 24 2026 to September 18 2026.

SEMESTER TESTING:

- **enrollment in academic year 2026/2027** will run from September 15 to September 25 2026.

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

DATE OF HOLIDAY	NAME OF PUBLIC HOLIDAYS
November 1 st	All Saints' Day
November 18 th	Memorial day for the victims of the Homeland War, Vukovar and Škabrnja
December 25 th	Christmas Day
December 26 th	St. Stephen's Day
January 1 st	New Year's Day
January 6 th	Holly three kings
April 05 th	Easter
April 06 th	Easter Monday
May 1 st	International Workers' Day
May 30 th	Croatian National day
June 04 th	Corpus day
June 22 nd	Anti-Fascist Struggle Day
August 5 th	Homeland Thanksgiving Day
August 15 th	Feast of the Assumption

8. CALENDAR OF THE EXAMS

Dear students, in the table below, are the dates and hours of the regular written exams in the winter, summer, and autumn period at the Department of Traffic Studies, Professional undergraduate study of Traffic, direction: Road Traffic Šibenik University of Applied Sciences. The dates of the exams for the other months of the year are issued by the Šibenik University of Applied Sciences Council upon the proposal of the Dean, and they are published separately on the official website of Šibenik University of Applied Sciences. Due to unforeseen reasons, it is possible to move the aforementioned datea and hours for the written exams.

Head of course	Name of course	Date and hours of written exams					
		January / February (hours)		June / July (hours)		August / September (hours)	
I. STUDY YEAR (I. semester)							
Beljo Ivana	Mathematics I	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Olivari Luka	Technical mechanics I	02.02. (10:00)	16.02. (10:00)	15.06. (10:00)	29.06. (10:00)	31.08. (10:00)	14.09. (10:00)
Kardum Goleš Ivana	English language I	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Olivari Luka	Graphic communications	04.02. (10:00)	18.02. (10:00)	17.06. (10:00)	01.07. (10:00)	02.09. (10:00)	16.09. (10:00)
Šego Darijo	Modern traffic systems	29.01. (17:00)	12.02. (17:00)	10.06. (14:00)	24.06. (14:00)	25.08. (10:00)	08.09. (10:00)
Gaćina Nikolina	Knowledge of goods	26.01. (09:00)	09.02. (09:00)	12.06. (09:00)	26.06. (09:00)	26.08. (09:00)	09.09. (09:00)
Nimac Krešimir	Traffic law	26.01. (16:00)	09.02. (16:00)	09.06. (16:00)	23.06. (16:00)	25.08. (16:00)	08.09. (16:00)

I. STUDY YEAR (II. semester)							
Beljo Ivana	Mathematics II	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Olivari Luka	Technical mechanics II	02.02. (10:00)	16.02. (10:00)	15.06. (10:00)	29.06. (10:00)	31.08. (10:00)	14.09. (10:00)
Kardum Goleš Ivana	English language II	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Klarin Zvonimir	Informatics	05.02. (11:00)	19.02. (11:00)	11.06. (10:00)	25.06. (10:00)	28.08. (10:00)	11.09. (10:00)
Radić Lakoš Tanja	Traffic and ecology	04.02. (10:00)	18.02. (10:00)	12.06. (10:00)	26.06. (10:00)	27.08. (10:00)	10.09. (10:00)
Šego Darijo	Traffic logistics	04.02. (17:00)	18.02. (17:00)	15.06. (14:00)	29.06. (14:00)	27.08. (10:00)	10.09. (10:00)
Mileta Danijel	Basics of electrical engineering and electronics	26.01. (16:00)	09.02. (16:00)	08.06. (16:00)	23.06. (16:00)	24.08. (16:00)	07.09. (16:00)
II. STUDY YEAR (III. semester)							
Beljo Ivana	Operational research in traffic	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Olivari Luka	Basics of mechanical engineering	02.02. (10:00)	16.02. (10:00)	15.06. (10:00)	29.06. (10:00)	31.08. (10:00)	14.09. (10:00)
Kardum Goleš Ivana	English language III	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Slavulj Marko	Urban mobility	04.02. (17:00)	18.02. (17:00)	17.06. (10:00)	01.07. (10:00)	27.08. (10:00)	10.09. (10:00)
Šego Darijo	Traffic corridors and merchandise flows	04.02. (17:00)	18.02. (17:00)	17.06. (10:00)	01.07. (10:00)	27.08. (10:00)	10.09. (10:00)
Poljičak Ana-Mari	Internal transport and storage	26.01.	09.02.	11.06.	25.06.	28.08.	11.09.

		(11:00)	(11:00)	(11:00)	(11:00)	(11:00)	(11:00)
Šego Darijo	Logistics and supply chains	29.01. (17:00)	12.02. (17:00)	10.06. (14:00)	24.06. (14:00)	25.08. (10:00)	08.09. (10:00)
II. STUDY YEAR (IV. semester)							
Beljo Ivana	Statistics in traffic	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Olivari Luka	Theory of vehicle movement	04.02. (10:00)	18.02. (10:00)	17.06. (10:00)	01.07. (10:00)	02.09. (10:00)	16.09. (10:00)
Kardum Goleš Ivana	English language IV	03.02. (09:00)	17.02. (09:00)	16.06. (09:00)	30.06. (09:00)	01.09. (09:00)	15.09. (09:00)
Štrkalj Zvonimir	Technology and organization of public city transport	28.01. (11:00)	11.02. (11:00)	12.06. (14:00)	26.06. (14:00)	24.08. (10:00)	07.09. (10:00)
Šego Darijo	Infrastructures of road traffic	29.01. (17:00)	12.02. (17:00)	10.06. (14:00)	24.06. (14:00)	25.08. (10:00)	08.09. (10:00)
Poljičak Ana-Mari	Transshipment resources	26.01. (12:00)	09.02. (12:00)	11.06. (12:00)	25.06. (12:00)	27.08. (11:00)	10.09. (11:00)
Poljičak Ana-Mari	Freight-distributional centres and terminals	27.01. (11:00)	10.02. (11:00)	12.06. (11:00)	26.06. (11:00)	28.08. (11:00)	11.09. (11:00)
Mečev Dijana	Economics of traffic	05.02. (10:00)	19.02. (10:00)	10.06. (10:00)	24.06. (10:00)	26.08. (10:00)	09.09. (10:00)
III. STUDY YEAR (V. semester)							
Poljičak Ana-Mari	Safety and protection of transport processes	27.01. (11:00)	10.02. (11:00)	12.06. (12:00)	26.06. (12:00)	28.08. (12:00)	11.09. (12:00)
Jurić Ivo	Resources of road traffic	27.01. (13:00)	10.02. (13:00)	11.06. (13:00)	25.06. (13:00)	27.08. (13:00)	10.09. (13:00)
Štrkalj Zvonimir	Technology and organization of road traffic	30.01. (11:00)	13.02. (11:00)	09.06. (11:00)	23.06. (11:00)	26.08. (11:00)	09.09. (11:00)

Štrkalj Zvonimir	Traffic geoinformation systems	26.01. (10:00)	09.02. (10:00)	15.06. (11:00)	29.06. (11:00)	31.08. (11:00)	14.09. (11:00)
Feletar Petar	Traffic techniques	29.01. (13:00)	12.02. (13:00)	11.06. (13:00)	25.06. (13:00)	27.08. (13:00)	10.09. (13:00)
Mileta Danijel	Information systems in road traffic	26.01. (16:00)	09.02. (16:00)	08.06. (16:00)	23.06. (16:00)	24.08. (16:00)	07.09. (16:00)
Šego Darijo	Transport geography	29.01. (17:00)	12.02. (17:00)	10.06. (14:00)	24.06. (14:00)	25.08. (10:00)	08.09. (10:00)
Poljičak Ana-Mari	Traffic in tourism	28.01. (11:00)	11.02. (11:00)	12.06. (11:00)	26.06. (11:00)	28.08. (11:00)	11.09. (11:00)
III. STUDY YEAR (VI. semester)							
Šego Darijo	Infrastructures of road traffic	29.01. (17:00)	12.02. (17:00)	10.06. (14:00)	24.06. (14:00)	25.08. (10:00)	08.09. (10:00)

9. THE CURRICULUM OF THE COURSES

Dear students, below this plan are the **curricula of all courses** with general information, learning outcomes, themed units, evaluation of work, formation of grades, and mandatory and supplementary literature.

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	MATHEMATICS I	1.8. ISVU course code	270660 / 270661
1.2. Course lecturer	Ivana Beljo, grad. eng. math., univ. spec. oecc., senior lecturer	1.9. MOZVAG course code	-
1.3. Assistants and/or associates	Luca Olivari, master of math., title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1 st level – materials available on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Study year	1 st	1.13. Modernization	☐ yes ☒ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The objective of the course is for students acquire knowledge and skills in analytical thinking, as well as logical reasoning and interpreting results for further education. The goal of the course is for students to be equipped, based on theoretical knowledge and case studies, to understand, comprehend, recognize, and apply various quantitative methods for solving specific problems and methods for optimizing such problems..
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study programme level	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.
	LO9: Solve problems in the field of road transport using analytical methods.

2.4. Expected learning outcomes on the course level	Learning outcomes according 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 basic operations on sets and functions.					3, 4
	2. To conduct basic analysis of functions of one variable.					4, 5
	3. To calculate the limes of the given function.					4
	4. To derive the functions of one variable.					4, 5
	5. To apply functional analysis methods in transport problems solving.					4, 5
2.5. Course content according to detailed curriculum schedule	Constructive allignement					
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.	-	2 h
	2.	Sets. Sets of numbers.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to enumerate and distinguish basic concepts related to assemblies and perform basic operations on sets.	4 h
	3.	Functions – basic terms, Elementary functions.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h

	4.	Composition of the functions. Inverse function.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	5.	Evenness and oddness of a function. Periodicity of a function. Domain of a function. Graph of a function	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	6.	Growth/decline of a function. Concavity/convexity of a function	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions.	4 h
	7.	Limit of the function. Continuity of functions.	2, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to calculate limits.	4 h
	8.	Revision for colloquium. Colloquium. Derivatives.	1, 2, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve derivatives.	4 h
	9.	Derivative of a function, interpretation. Differentiation of elementary functions.	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve derivatives.	4 h
	10.	Derivative of composition	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve derivatives.	4 h
	11.	Monotonicity and extrema of a function.	2, 4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to examine the basic properties of a function, to analyze the solutions obtained and to draw a graph of the function based on them, and to comment on the obtained solutions.	4 h

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

3. EVALUATION OF STUDENTS' WORK

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

3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	0,5	Written exam	3 (without colloquium)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	0,5
	Colloquium	3,5 (without written and oral exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	0,5 (without colloquium)	Other	
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:					
	Obligation			Hours (estimate)		
	1. Attending classes and exercises			60		
	2. Preparation for the Colloquium / exam through self-study			90		
4. GRADING SYSTEM						
4.1. Grading seminar papers						
4.2. Grading colloquia/ written and oral exam	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	Activities in class	Preparation for teaching units; Understanding previous content; Participation in solving tasks together: 0 – 20 points				
	Seminar papers	-				
	Colloquium/written exam	Preparation/learning; Scoring and grading according to correct answers in the test: 0 – 80 points (min 40 points)				
	Oral exam	Preparation/learning; additional verification of unachieved learning outcomes				

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	
	50 – 64,9%	2 (satisfactory)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE				
5.1. Compulsory literature (available in the library and via other media)	Title		Number of copies in the library	Availability via other media
	Pašagić, H., Ivanković, B., Kapetanović, N.: Mathematical methods in Traffic, Zagreb, 2004.		3	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Neralić, L.: Introduction in mathematics programming 1, Zagreb, 2012. Hillier F., Lieberman G.: Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed.			
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.			
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).			

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TECHNICAL MECHANICS I	1.8. Course code in ISVU	270663 / 270664
1.2 Course lecturer	Luka Olivari, master of mech., senior lecturer	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim of the course is to provide students with theoretical knowledge and practical examples to: be introduced to the professional and scientific content of technical mechanics (statics); master the application of acquired knowledge in solving appropriate tasks in the field of traffic engineering; and adopt approaches, methods, and procedures for the application of mechanics 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	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO9: Solve problems in the field of road transport using analytical methods.		
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding, 3- application,

						4- analysis, 5- evaluation, 6- synthesis.
	1. Differentiate between concepts, laws, physical quantities, and units of measurement in the field of technical mechanics.					4
	2. Reduce a system of vector physical quantities and decompose vector physical quantities into their components.					5, 5
	3. Free a rigid body from constraints and formulate equilibrium equations.					6, 6
	4. Determine the center of gravity of complex shapes.					5
	5. Analyze the impact of friction on the equilibrium of mechanical systems.					5
	6. Solve problems involving planar solid beams.					6
2.5. Course content according to detailed curriculum schedule	Constructive allignement					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	2.	Physical Quantities and Units of Measurement in Technical Mechanics, Trigonometry	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	3.	Force and Force Representation, System of Forces, Reduction and Decomposition of Forces	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h

	4.	Coplanar-Concurrent System of Forces	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	5.	Newton's Laws, Principle of Inertia, Law of Proportionality of Force and Acceleration, Principle of Equality of Action and Reaction	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	6.	Six Axioms of Statics of Rigid Bodies	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	7.	Moment, Varignon's Theorem	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	8.	Types of Supports, Freeing Bodies from Constraints	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	9.	Equilibrium, Types of Equilibrium, Conditions of Equilibrium	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h

	10.	Graphostatics, Force Polygon, Culmann's and Ritter's Method	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	11.	Center of Gravity of Complex Rigid Bodies	1, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	12.	Friction in Mechanical Systems	1, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	13.	Planar Solid Beams	1, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	14.	Diagrams of Internal Forces and Moments in Planar Solid Beams	1, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	15.	Review, recapitulation, and preparation for the exam.	1, 2, 3, 4, 5, 6	Listen to lectures and read literature. 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 are required to bring a calculator and other equipment necessary for solving tasks and participating in lectures and exercises. Students who achieve the following during the course: From 0 to 49.9% of ECTS credits - are graded Fail and must take and pass a written exam (test). More than 50% - students earn the right to take the final exam for the course. Students can pass the final exam for the course in two ways: a) during the course by passing three colloquiums and the oral part of the exam; b) by passing the written and oral parts 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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimated)		
	1. Attending classes			60		
	2. Colloquiums and written exam individual preparation			60		
	3. Oral exam individual preparation			30		
4. GRADING SYSTEM						
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 points	65-79,9 points	80-89,9 points	90-100 points	
	The oral part of exem	2	3	4	5	
50-64,9 points		65-79,9 points	80-89,9 points	90-100 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	
	50 – 64,9%		2 (sufficient)		D	

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
	Duranović S.: Book from course Tehnical mechanics, Polytechnic of Šibenik, Šibenik, 2015.	-	on-line (e-learning)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from the lectures and exercises on the e-learning system Šibenik University of Applied Sciences for the course Tehnical mechanics. Jurum Kipke, J., Wolf, H., Muftić O.: Mechanics in traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb 2009.	- 5	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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	ENGLISH LANGUAGE I	1.8. Course code in ISVU	129833 / 202067
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 15 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.		
	LO3: Independently and responsibly analyse the relevant literature necessary for decision-making.		

	Learning outcomes according 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 apply and link basic terms from the professional terminology of English road traffic and use them in written and oral communication.				3
	2.	to apply grammatical structures in texts and assignments and real-life context				3
	3.	to develop a shorter essay within the topics of the course.				3
	4.	to communicate in a foreign language within the subjects of the course, to express one`s own opinions.				6
	5.	to compare and evaluate different traffic solutions.				5
	6.	to use part of the general language competency at levels B1				6
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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	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	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 (Present Simple And Continuous).	1, 2, 3	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.	At The Airport And Air Pollution Problem (Present Tenses)	1, 2, 3, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of	4 h

					other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	6.	Keeping Drunken Drivers Off The Road – Past And Perfect Tenses	1, 2, 3, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to 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.	Types Of Drivers – Verb Tenses	1, 2, 3, 5, 6	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 colloquium	1, 2, 3, 5, 6	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	10 h

					the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	9.	Fitness To Drive – Relative Pronouns And Possessivess	1, 2, 3, 5, 6	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	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.	The Engine Of A Car – Future Tenses – Will And Going To And Present Continuous	1, 2, 3, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real	10 h

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

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students` attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student produces for homework. Of particular importance for the final evaluation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform

	oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
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	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 and exercises			45		
	2. Preparation for the Colloquium / exam through self-study			45		
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	Maximum points
		3 points	7 points		20 points	20 points
	Seminar paper					

	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	4	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)		5 (excellent)	ECTS grade	
	90 – 100%		4 (very good)	A	
	80 – 89,9%		3 (good)	B	
	65 – 79,9%		2 (sufficient)	C	
	50 – 64,9%		5 (excellent)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
	Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)			10	X
5.2. . Additional literature (at the moment of changes and/or amended of study programme)	Tamara Polić: „The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students“, Department for traffic, Polytechnic of Rijeka, 2007. Adrian Pilbeam, Nina O`Driscoll: „Logistics Management“, Market Leader, Pearson Longman, 2010 A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University			10	X (e-learning, 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	GRAPHIC COMMUNICATIONS	1.8. Course code in ISVU	201132 / 202070
1.2. Course lecturer	Luka Olivari, master of mech., senior lecturer	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , 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	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim 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	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO7: Apply computer tools for analyzing and comparing data.		
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding,

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1. Differentiate concepts in graphical communication.					4
	2. Select the view that best depicts the object and draw orthogonal projections based on the given isometric view.					5, 5
	3. Design an isometric representation of the body based on the given orthogonal projections.					5
	4. Distinguish the rules of technical presentation and apply them to the technical drawing.					5, 5
	5. Draw a technical drawing in the AutoCAD computer program.					5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introductory presentation (introducing students to the content and obligations of the course). The importance of graphical communications. Short history and development of graphic communications	1	Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning course page.	At the colloquium or the written and oral exam they define and explain the basic concepts.	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 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.	
	4.	Technical spatial sketching and construction. Orthogonal projections. European and American display mode.	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; form an isometric representation of the body based on given orthogonal projections.	4 h
	5.	Display rules in technical drawings. Applying measures.	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing.	4 h
	6.	Markings on the technical drawing (marks of machining, roughness, tolerances of dimensions and shape)	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing.	4 h
	7.	Cross sections and rules for screwing.	1, 2, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing.	4 h
	8.	Spatial presentation.	1, 3, 4	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; form an isometric representation of the body based on given	4 h

					orthogonal projections; distinguish between the rules of the technical view and apply them to the technical drawing.	
	9.	Introduction to Computer-Aided Design. CAD / CAM systems. Software packages and scope.	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h
	10.	Special markings on technical drawings and simplifications. Details on technical drawings. AutoCAD, interface and basic commands.	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h
	11.	AutoCAD, commands for drawing, using and creating a new layer.	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h
	12.	AutoCAD, commands for applying measures, creating a template, printing drawings.	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the technical drawing; draw a technical drawing in an AutoCAD computer program.	4 h

	13.	AutoCAD, creation and manipulation of objects.	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise.	At the colloquium or the written and oral exam: define and explain the basic concepts; distinguish between the rules of the technical layout and apply them to the 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.	Review, recapitulation, 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 are required to bring equipment necessary for solving tasks and participating in lectures and exercises. Students who achieve the following during the course: From 0 to 49.9% of ECTS credits - are graded Fail and must take and pass a written exam (test). More than 50% - students earn the right to take the final exam for the course. Students can pass the final exam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the written and oral parts of the exam.					
3.2. Student work monitoring (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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:	
	Obligation	Hours (estimated)
	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. GRADING SYSTEM

4.1. Evaluation of written exam	Elements of evaluation	Bad	Satisfying	Above average
	Technical drawing	Drawing incomplete, imprecise and sloppy. Made on inadequate paper size.	Drawing neatly crafted with a small number of imprecise errors, a clear distinction between types of lines.	Drawing very neatly made without errors.
	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 know interface or basic commands. It is not capable of drawing in a computer program.	Knows basic and some advanced commands in a computer program, uses them with minor errors. He is able to create a technical drawing in a computer program with a little help and suggestions.	Knows basic and advanced commands in a computer program, uses them without errors. Able to fully draw a technical drawing in a computer program.
4.2. Evaluation of oral exam	Knowledge and expression.	It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	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
	50 – 64,9%		2 (sufficient)		D
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
	1Lučić, M.: tehcnical drawings s AutoCAD-om [Book, 2. izd.]. Naklada Lučić, Osijek, 2020.			5	-
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from the lectures and exercises on the e-learning system of the Šibenik University of Applied Sciences for the course.			-	on-line (e-learning)
	Opalić, M., Kljajin, M., Sebastijanović, S.: Technical drawing, Zrinski d.d., Čakovec/Slavonski Brod, 2007.				-
	Klem N., Koški Ž., Otković I.: Technical drawing and CAD, Faculty of civil engineering, University of Osijek, Osijek 2006.				-
	Galeta T., Glazina V., Kljajin M.: AutoCAD Fundamentals of Technical Drawing, Faculty of mechanical engineering, University of Osijek, Slavonski brod, 2005.				On-line
					On-line

	Herold Z .: Computer and Engineering Graphics, Faculty of mechanical and naval engineering, University of Zagreb, Zagreb 2003. Budimir D .: Exercises from AutoCAD, Faculty of transport and traffic sciences, University of Zagreb, Zagreb 2010.		
5.3. 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	MODERN TRAFFIC SYSTEMS	1.8. Course code at ISVU	270665 / 270666
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	PhD Ana-Mari Poljičak, senior lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 30 + 0)
1.4. Study program (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1st, course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is to provide students with theoretical knowledge and case studies: define elements and branches of the transport system; learn the elements of the transport system; understand the technical and technological characteristics of the traffic branches; acquire knowledge about the organizational features of the traffic branches and the complexity of the transport system; get to know the interdisciplinary approach to the transport system and transport processes; apply the learned content of this course to practice.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF
2.3. Learning outcomes on the study program level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.

	LO06: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.	
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy:	Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis
	1. Distinguish elements of transport technology and historical periods of development of transport branches.	4
	2. Connect individual transport branches and associated technological processes.	5
	3. Identify differences, advantages and disadvantages of use between individual transport branches.	4
	4. Analyze the relevant literature searched in Croatian and English.	4
	5. Present acquired knowledge about individual elements of transport technology for individual transport branches.	6

2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introductory presentation (acquaintance of students with the course content and obligations)	-	They listen to a lecture. During the individual work on the computer, they are introduced to the course content and documents on the e-learning page of the course.	-	2 h
	2.	Definition of traffic (the term Traffic and Traffic Technology). Historical development of transport branches.	1, 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 a preliminary exam or written and oral exam, the elements of the transport system and explain interdisciplinarity in the transport system, as well as state the historical development of the elements and branches of the transport system.	4 h

	3.	Road traffic (roads, terminals, means of transport, tachograph, technological processes).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of road transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	5 h
	4.	Road traffic (roads, terminals, means of transport, tachograph, technological processes).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of road transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	4 h
	5.	Railway traffic (railway, terminals, means of transport, timetable, signaling, technological processes).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of railway transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	4 h
	6.	Maritime traffic (sea water ports, means of transport, safety of navigation, technological processes).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of maritime transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	5 h
	7.	Maritime traffic (video film about the largest seaports in Europe).	2, 3, 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	In a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of maritime transport, and define and describe the role of the technical and technological	4 h

				up with their own ideas, and ways to solve problems.	characteristics of this branch of transport in the transport system.	
	8.	Traffic on Inland Waterways (waterway, classes of inland waterways, ports, means of transport, signalling, technological processes, video film).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of inland waterway transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	4 h
	9.	Air traffic (airport or airfield, means of transport, flight schedule, flight control, technological processes, video film).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of air transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	5 h
	10.	Modern transport technologies (transportation technologies in land, water and air traffic, video film).	2, 3, 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 a preliminary exam or written and oral exam, they can list and explain modern transport technologies in land, water and air transport, and define and describe the role of transport technologies in the transport system.	5 h
	11.	City transport (public transport of passengers throughout history, modes of public city transport, lines of public city transport).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of urban transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	5 h

	12.	Pipeline and Cableway Traffic (infrastructure, types, video).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of pipeline and cableway transport, and define and describe the roles of the technical and technological characteristics of these transport branches in the transport system.	4 h
	13.	Postal traffic (postal network, postal items and services, addressing and payment of items and services, technological processes).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of postal transport, and define and describe the role of the technical and technological characteristics of this branch of transport in the transport system.	5 h
	14.	Telecommunication traffic (telecommunication services, telecommunications network).	2, 3, 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 a preliminary exam or written and oral exam, they are able to list and explain the elements and technologies of telecommunications traffic, and define and describe the role of the technical and technological characteristics of this branch of traffic in the traffic system.	4 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. Students` obligations	In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students` attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: from 0 - 24.9% of ECTS they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% students have the right to take the final exam. Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam)).

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	0,5	Other	
	Class activity	0,5	Oral exam	1	Other	

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:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Preparation for the Colloquium / exam through self-study			90		

4. GRADING SYSTEM

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	The sources are listed but incomplete and with errors. The references are	The sources are accurately, completely and consistently listed. The references

			a cursory approach to exploring the topic.	relevant to the topic and show a satisfactory research attitude.	are appropriate, their list is "rich" and comprehensive and shows a detailed research approach.
4.2. Grading of the colloquium / 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)		Numerical grade		ECTS grade
	90 – 100%		5 (excellent)		A

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

5. ADDITIONAL INFORMATION ABOUT THE COURSE

	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	Cerovac, V.: Technology and traffic safety, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2001. (selected chapters) Božičević, D., Kovačević, D.: Modern transport technologies, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002.	3	No
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Courses Lectures. Zelenika, R.: Traffic systems, Faculty of economics, University of Rijeka, Rijeka, 2001. Zelenika, R.: Multimodal traffic systems, Faculty of economics, University of Rijeka, Rijeka, 2006. 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	KNOWLEDGE OF GOODS	1.8. ISVU course code	187586 / 202074
1.2. Course lecturer	PhD Nikolina Gaćina, Senior Lecturer	1.9. MOZVAG course code	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2.
1.6. Study year	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The 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.
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.

	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
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.	3
	2. Categorize and compare the basic concepts of the science of knowledge of goods.	4, 5
	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.	5, 6
	6. Distinguish and compare different processes of food preservation in relation to the longevity and preservation of the nutritional value of the product.	5, 6
	7. Analyze and anticipate the importance of food and non-food commodities of today and today.	4, 5
	8. Present the acquired knowledge, ideas, problems and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No.	Thematic ensemble / Lecture Topic	LO of the course	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 their choice. List and analyze the primary functions of packaging material.	10 h
	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,	6 h

					and evaluate the appropriate type of storage and transport depending on the type of product.	
	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. And evaluate combining different canning methods.	10 h
	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	6 h

					dangerous substances, to analyze the possible danger of the same.	
	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 is rated unsuccessful and cannot get ECTS credits and must re-enrol the subject in the next academic year; from 25 – 49,9% ECTS is rated inadequate and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; more than 50% ECTS credits - students have the right to access the final exam of the subject. Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the lessons, solving case studies, making and presenting the seminar paper and project, passing two colloquia); b) during the course (active participation in the lessons, solving case studies, creating and presenting the seminar paper and project) and passing the exam (written and oral exam).					
3.2. Monitoring student work (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 SYSTEM

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	
	50 – 64,9%		2 (sufficient)	D	
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
	Gacina, N. (2012). Knowledge of goods. Internal script of the Polytechnic of Šibenik, Šibenik. Lazibat, T. (2004). Knowledge of goods and quality management. Synergy Publishing, Zagreb. (Chapters selected)			4	e-learning
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Andrijanić, I., Balen, M., Lazibat, T. (2001). Knowledge of merchandise in commerce. Mikrorad, Zagreb. (Chapters selected)			4	
	Štrumberger, N. (2000). Handling of materials in traffic. Faculty of transport and traffic sciences, University of Zagreb, Zagreb. (Chapters selected)			4	

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be 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 Šibenik University. Students can contact the teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is possible to ask questions by e-mail (from the official e-mail address from the domain @vus.hr) that will be answered in a short time (no later than five working days from the receipt of e-mail).

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TRAFFIC LAW	1.8. Course code in ISVU	140781 / 202100
1.2. Course lecturer	PhD Krešimir Nimac, title senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and associates	PhD Nikola Mandić, associate professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim of the course is to acquaint students with the basic concepts of law in general, as well as all branches of traffic law with special emphasis on road law. In this way, students acquire basic knowledge about the system of traffic law and the relationship between specific modes of transport, as well as the activities necessary for the functioning of transport as a whole.
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: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.

	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes according 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. Interpret basic concepts and concepts of law, and connect them with different branches of traffic.	3, 3
	2. Compare and analyze branches of transport, as well as administrative law and property legal regulation of all individual transport branches.	4, 4
	3. Recommend measures to improve the road safety situation in the Republic of Croatia.	5
	4. Predict trends in traffic law.	5
	5. Draw up a draft contract for the carriage of passengers, luggage or items in road transport.	6

2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No.	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	Students listen to a lecture. In the course of seminary classes students are introduced to the course content and documents on the e-learning page of the course.	-	2 h
		FUNDAMENTALS OF LAW - concept and elements, legal rule and legal relationship	1	Students listen to a lecture, browse databases and read literature.	At the midterm or oral exam, they know how to define basic legal concepts, legal rule and legal relationship.	3 h
	2.	LEGAL ACTS - types of legal acts, Constitution, laws and bylaws, and international agreements	1	Students listen to a lecture. Browse databases and read literature.	At the midterm or oral exam, they know how to define a legal act, distinguish the types of legal acts, define the basic functions of the constitution and laws, and define the basic constitutional principles in	3 h

					the Republic of Croatia. Developed and presented practical work (independent use of computer programs).	
	3.	ORGANIZATION OF STATE AUTHORITY - legislative, executive and judicial authorities, Constitutional Court of the Republic of Croatia	1	Students listen to a lecture and read literature. In seminar classes, independently and in a group, using the brainstorming method and the method of discussing different models of state organization.	At the midterm or oral exam, they know how to distinguish forms of government in the Republic of Croatia, define the theory of division of power, and know the structure and jurisdiction of the Constitutional Court. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	4 h
	4.	CONCEPT, MEANING, SOURCES OF TRAFFIC LAW - concept, meaning and scope of traffic and traffic law, sources of traffic law	1, 2	Students listen to a lecture. Browse databases and read literature.	At the midterm or oral exam, they can explain the concept, meaning and scope of traffic, and enumerate and explain the sources of traffic law. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	3 h
	5.	TRAFFIC LAW OF THE EUROPEAN UNION AND INTERNATIONAL TRAFFIC ORGANIZATIONS - institutions of the European Union, European law, legal regulation of transport in the European Union and international transport organizations	1	Students listen to lectures and read literature. In the seminar classes, individually and in groups, they analyze examples from the practice of European Union countries and draw conclusions about the application of legal regulations to a specific factual situation.	At the midterm or oral exam, they know the basic features of the structure of the European Union, the legal regulation of transport in the European Union, and the structure and competences of the basic international transport organizations. Prepared and presented practical work (independent use of computer programs and sources of legal practice of the European Union).	3 h
	6.	TRAFFIC INSURANCE - purpose and subject of insurance, types of insurance and insurance contract	1	Students listen to lectures and read literature. They use multimedia and networking. In seminar classes in group work, they analyze examples from the practice of insurance	At the midterm or oral exam, they can define the basic concepts related to traffic insurance, types of insurance as well as the characteristics of insurance contracts. Prepared and presented practical work	3 h

				companies, and draw conclusions about the application of legal regulations to a specific factual situation.	(independent use of computer programs and sources of court and legal practice).	
	7.	AIR LAW - international conventions, international air traffic agreements, airports, air traffic, obligatory relations in air traffic	2, 4	Students listen to lectures and read literature. In seminar classes in group work, they analyze examples from practice and draw conclusions about the application of legal regulations to a specific factual situation.	At the colloquium or oral exam, they know how to define the legal regulation of international air traffic with the basic provisions of international conventions, and define institutes related to administrative and property regulation of air traffic in the Republic of Croatia with special emphasis on air transport contracts. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	4 h
	8.	RAILWAY LAW - railway infrastructure, railway safety, contracts on railway transport, legal regulation of international railway transport	2, 4	Students listen to lectures and read literature. In the seminar classes, they analyze examples from practice independently and in a group and draw conclusions about the application of legal regulations to a specific factual situation.	At the colloquium or oral exam, they know how to define the manner of administrative regulation of railway transport in the Republic of Croatia, as well as property regulation with special emphasis on contracts for transport in railway transport. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	4 h
	9.	ROAD LAW - transport of passengers and cargo, public roads, legal regulation of international road traffic, international conventions and organization of road traffic	2, 4	Students listen to lectures and read literature. In seminar classes, they browse databases individually and in groups with a special focus on public road management.	At the midterm or oral exam, they know how to define the basic concepts in road traffic, and the manner of administrative regulation of road traffic in the Republic of Croatia. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	5 h
	10.	ROAD TRANSPORT CONTRACTS - concept of transport	2, 4, 5	Students listen to lectures, browse databases and read literature. At the	At the midterm or oral exam, they know how to define the essential features of a	4 h

		contract, essential elements, conclusion of contract, liability, transport of goods and transport of passengers		seminar classes, they group up a contract on the transport of passengers and things.	contract on road transport in accordance with the Civil Obligations Act of the Republic of Croatia. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	
	11.	ROAD SAFETY	2, 3, 4	Students listen to lectures and read literature. The seminar method uses the brainstorming method and the method of discussing legislation with special reference to young drivers.	At the midterm or oral exam, they know how to define basic institutes related to road traffic safety in accordance with the Road Traffic Safety Act in the Republic of Croatia. Developed and presented practical work (independent use of computer programs and sources of legal practice)	3 h
	12.	MARITIME LAW - ports, waterways, ship, ship's captain, rescue, ship collision, shipping contracts, international conventions	2, 4	Students listen to lectures and read literature. In the seminar classes, they individually research the content of this thematic area by searching the database.	At the midterm or oral exam, they know how to define basic institutes in maritime law in accordance with the Maritime Code of the Republic of Croatia, with special emphasis on shipping contracts. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	3 h
	13.	POSTAL LAW - postal network, Postal Services Council, accession treaty, international postal traffic organizations	2, 4	Students listen to lectures and read literature. In seminar classes, they analyze examples from practice individually or in a group.	At the midterm or written / oral exam, they can define the basic concepts related to postal law, as well as the manner of administrative and property regulation of postal traffic in the Republic of Croatia. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	3 h
	14.	TELECOMMUNICATION LAW - HAKOM, infrastructure,	2, 4	Students listen to lectures, browse databases and read literature.	At the colloquium or oral exam, they know how to define the basic concepts related to telecommunications law, as well as the	3 h

		concessions, protection of service users' rights, market competition			manner of administrative and property regulation of telecommunications traffic in the Republic of Croatia. Prepared and presented practical work (independent use of computer programs and sources of legal practice).	
	15.	CONCLUDING REMARKS, REPETITION OF AND PREPARATION FOR THE EXAM	-	Students listen to lectures and read literature. Students prepare individually for the exam.		40 h
3. EVALUATION OF STUDENTS' WORK						
3.1. Students' obligations	In accordance with the <i>Regulations on Studying</i> and the <i>Regulations on Student Assessment and Evaluation</i> : for all full-time students' attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students must create, present and have a positively rated seminar paper. Students who have achieved during the course: from 0 - 24,9% ECTS credits are rated unsuccessful and cannot obtain ECTS credits, and must re-enrol in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary examination 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 teaching, preparation and presentation of seminar work and two midterm exams); b) during class (active participation in teaching, preparation and presentation of seminar work) and taking 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	0,5	Written exam		Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium (midterm)	2	Seminar paper	0,5	Other	
	Class activity		Oral exam	2 (without colloquia/midterm)	Other	
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:					
	Obligation			Hours (estimated)		
	1. Attending classes			35		
	2. Creating and Presenting seminar paper			15		

3. Preparation for the Colloquium / exam through self-study

40

4. GRADUATE SYSTEM

4.1. Grading seminar papers	The evaluation element	Unsatisfactory		Satisfactory		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 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 show a detailed research approach.		
4.2. Grading colloquia/ written and oral exam	Unsatisfactory		Satisfactory			Above average		
	Student 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.		Student reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supporting them with examples.			Knowledge is at the level of analysis, synthesis and evaluation. Student observes the principles of law, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts supporting them with examples. Finds solutions that were not originally given and notices correlations with related material.		
4.3. Final grade according to absolute division	Active attendance	70-75% attendance		76-86% attendance		87-100% attendance		Solved case studies
		2 points		4 points		7 points		3 points

	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Taking a colloquium/midterm	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. 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	
	50 – 64,9%		2 (sufficient)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
	Slobodan Kaštela, Ladislav Horvat: Traffic law, School book, Zagreb, 2008. Dragan Bolanča: Traffic law (book in electronic form), Polytechnic of Šibenik, 2016.			5	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Aleksandra Vasilj, Biljana Činčurak Erceg: Traffic law and insurance, Faculty of Law, University of Osijek, Osijek, 2016. Teaching materials from lectures				

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

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	MATHEMATICS II	1.8. ISVU course code	270667 / 270668
1.2. Course lecturer	Ivana Beljo, grad. eng. math., univ. spec. oecc., senior lecturer	1.9. MOZVAG course code	-
1.3. Assistants and/or associates	Luca Olivari, master of math., title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1 st level – materials available on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Study year	1 st	1.13. Modernization	☐ yes ☒ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	Introducing students to the fundamental concepts of linear algebra and functions of single variable, which they can apply in different courses. Adopting analytical skills, logical and critical thinking skills.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study programme level	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.
	LO9: Solve problems in the field of road transport using analytical methods.

2.4. Expected learning outcomes on the course level	Learning outcomes according 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 solve integrals by applying the appropriate integration techniques.					4, 5
	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 apply linear algebra and functional analysis methods in transport problems solving.					4, 5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.	-	2 h
	2.	Integrals	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve an integral.	4 h
	3.	Indefinite Integrals. Definite Integrals.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve an indefinite and definite integral.	4 h
	4.	Substitution Rule and Integration By Parts	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve an indefinite integral using the method of substitution and partial integration.	4 h

	5.	Applications of Integration.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to analyze and sketch a graph of functions, and solve a definite integral.	4 h
	6.	Applications of Integration. Revision for colloquium. Colloquium.	1	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to analyze and sketch a graph of functions, and solve a definite integral.	4 h
	7.	Matrices.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define matrices, perform basic computational operations with matrices.	4 h
	8.	Determinants.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to calculate the determinants.	4 h
	9.	The inverse matrix.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to calculate the inverse of a matrix	4 h
	10.	Systems of linear equations.	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to recommend a method for solving a system of linear equations and solve a system and apply it to problems.	4 h
	11.	Vectors.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors.	4 h
	12.	Scalar and vector product.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors.	4 h

	13.	Vector and mixed vector product.	3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors.	4 h
	14.	Applications of linear algebra.	4	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to recommend a method for solving a system of linear equations and solve a system and apply it to problems.	4 h
	15.	Final conclusions. Exam preparation.	1, 2, 3, 4	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	-	4 h

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	Student obligations are prescribed by the Study Regulations. It is recommended that students actively participate in classes, which includes engaging in discussions, solving tasks, etc. Students who are unable to attend classes regularly should consult with the professor during consultation hours or via email (ivana.beljo@vus.hr , ana.sisak@vus.hr). It is the responsibility of each student to stay informed about the conduct of classes. All announcements regarding the conduct or possible postponement of classes will be posted on the website of the Polytechnic of Šibenik or the course webpage, where all information about the course, as well as teaching materials and a list of literature, can also be found. Students can pass the final exam in the course in two ways: a) During the course through continuous student assessment (active participation in classes and two colloquiums). Students who do not meet some of the learning outcomes are required to take the oral part of the exam. b) During the course (active participation in classes) and by taking the exam (written and oral parts).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	0,5	Written exam	3 (without colloquium)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	0,5
	Colloquium	3,5 (without written and oral exam)	Seminar paper		Other	

	Class activity	0,5	Oral exam	0,5 (without colloquium)	Other	
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:					
	Obligation			Hours (estimate)		
	1. Attending classes and exercises			60		
	2. Preparation for the Colloquium / exam through self-study			90		
4. GRADING SYSTEM						
4.1. Grading seminar papers						
4.2. Grading colloquia/ written and oral exam	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	Activities in class	Preparation for teaching units; Understanding previous content; Participation in solving tasks together: 0 – 20 points				
	Seminar papers	-				
	Colloquium/written exam	Preparation/learning; Scoring and grading according to correct answers in the test: 0 – 80 points (min 40 points)				
	Oral exam	Preparation/learning; additional verification of unachieved learning outcomes				
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	
	50 – 64,9%		2 (satisfactory)		D	

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Marušić S.: Mathematics and textbook with resolved examples, Zagreb, 2007. Beljo I., Olivari L.: Mathematics, Šibenik University of Applied Sciences, 2024.	5	On-line
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from lectures and exercises Bradić, T., Rojki, R., Pečarić, J., Strunje, M.: Mathematics for Faculty of Technology, Multigraph - Zagreb 1994.		
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TECHNICAL MECHANICS II	1.8. Course code in ISVU	270675 / 270676
1.2 Course lecturer	Luka Olivari, master of mech., senior lecturer	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim of the course is to provide students with theoretical knowledge and practical examples to: be introduced to the professional and scientific content of technical mechanics (kinematics and dynamics); master the application of acquired knowledge in solving appropriate tasks in the field of traffic engineering; and adopt approaches, methods, and procedures for the application of mechanics 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	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO9: Solve problems in the field of road transport using analytical methods.		
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding, 3- application,

						4- analysis, 5- evaluation, 6- synthesis.
	1. Differentiate concepts, physical quantities, and units of measurement in the field of kinematics and dynamics.					4
	2. Analyze and sketch kinematic diagrams for different types of motion of particles and rigid bodies.					5, 5
	3. Classify different types of motion of particles and rigid bodies, and solve problems related to the geometry of motion.					5, 5
	4. Identify the causes of motion and the effects of force on a particle or rigid body using Newton's laws and principles of dynamics.					5
	5. Analyze and solve complex problems of mechanical energy using the laws of conservation and transformation of energy.					5, 5
	6. Differentiate types of collisions between two particles or material bodies, and calculate changes in momentum and energy.					5, 5
2.5. Course content according to detailed curriculum schedule						
Constructive allignement						
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	2.	Introduction to Kinematics of Particles and Rigid Bodies	1	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	3.	Linear Motion, Kinematic Diagrams for Linear Motion	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve	4 h

				Independent task solving. Individual preparation for colloquiums.	numerical problems from the specified unit.	
	4.	Circular Motion, Kinematic Diagrams for Circular Motion	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	5.	Variable Linear and Variable Circular Motion	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	6.	Curvilinear Motion in Plane and Space	1, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	7.	Review and recapitulation, preparation for the exam.	1, 2, 3	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	8.	Introduction to Dynamics of Particles and Rigid Bodies. D'Alembert's Principle	1, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	9.	Mechanical Work, Positive and Negative Work, Power, and Efficiency	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h

	10.	Forms of Mechanical Energy, Law of Conservation of Mechanical Energy	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	11.	Law of Kinetic Energy in Translation of Rigid Bodies	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	12.	Law of Kinetic Energy in Rotation of Rigid Bodies, Dynamic Moment of Inertia, Steiner's Theorem	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	13.	Impulse of Force, Momentum, Law of Momentum	1, 4, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	14.	Law of Conservation of Momentum, Collisions, Energy Loss in Collisions	1, 4, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	15.	Review, recapitulation, and preparation for the exam.	1, 4, 5, 6	Listen to lectures and read literature. 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 are required to bring a calculator and other equipment necessary for solving tasks and participating in lectures and exercises. Students who achieve the following during the course: From 0 to 49.9% of ECTS credits - are graded Fail and must take and pass a written exam (test). More than 50% - students earn the right to take the final exam for the course. Students can pass the final exam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the written and oral parts of the exam.					
3.2. Student work monitoring (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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimated)		
	1. Attending classes			60		
	2. Colloquiums and written exam individual preparation			60		
	3. Oral exam individual preparation			30		
4. GRADING SYSTEM						
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 points	65-79,9 points	80-89,9 points	90-100 points	
	The oral part of exem	2	3	4	5	
50-64,9 points		65-79,9 points	80-89,9 points	90-100 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	
	50 – 64,9%		2 (sufficient)		D	

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
	Đuranović S.: Book from course Technical mechanics, Polytechnic of Šibenik, Šibenik, 2015.	-	on-line (e-learning)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from the lectures and exercises on the e-learning system Šibenik University of Applied Sciences for the course Technical mechanics.	-	on-line (e-learning)
	Jurum Kipke, J., Wolf, H., Muftić O.: Mechanics in traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb 2009.	5	-
	Jecić S.: Mehanika (kinematika i dinamika), Tehnička knjiga, Zagreb, 1989.	2	-
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	ENGLISH LANGUAGE II	1.8. Course code in ISVU	187599 / 202076
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	Ivana Jardas Duvnjak, professor, title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 15 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim of the course is to expand the vocabulary related to road and postal traffic as well as predicted grammatical structures that include tenses, the adjective comparison, adverbs, modal verbs, transformation of direct into reported speech in the present. The aim is also to expand the vocabulary related to traffic, while exercises determine and practice grammar and new vocabulary. Another goal of the course is to write different kinds of business letters. By attending a foreign language classes, students are introduced with new communication systems, enabling their easier and more direct involvement in world events and getting acquainted with the elements of English culture and civilization of the English speaking world. Learning a foreign language is in line with the aspiration to preserve the richness of the diversity of multi-faceted Europe as well as with fostering the development of the culture of dialogue and civilization.		
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF, Completed course English language I		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.		
	LO3: Independently and responsibly analyse the relevant literature necessary for decision-making.		

	Learning outcomes according 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 apply basic and advanced terms from the professional terminology of English road traffic in English.				3
	2.	to apply grammatical structures in texts and assignments and real-life context				3
	3.	to develop an essay within the topics of the course.				5, 6
	4.	to communicate in a foreign language within the subjects of the course, to express one own opinions.				6
	5.	to compare and evaluate different traffic solutions.				5
	6.	to use part of the general language competency at levels B1.				6
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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	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.	MANAGEMENT IN TRAFFIC - Adverbs and their formation	1, 2, 3, 4	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	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.	MODERN TRANSPORTATION (HYDROFOILS) – Modal verbs	1, 2, 3, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of	4 h

					other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	6.	RAIL TRAFFIC IN EUROPE – Expressing habit	1, 2, 3, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to 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.	Traffic in the USA – Tenses	1, 2, 3, 5, 6	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, I colloquium	1, 2, 3, 5, 6	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	10 h

					the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	9.	Hovercraft – Indirect speech	1, 2, 3, 5, 6	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	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	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	10 h

					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.	
	12.	Post office and their role in the progress of mankind – Future tenses	1, 2, 3, 4, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to 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	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	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 colloquium	1, 2, 3, 4, 5, 6	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70% is required. Part-time students are required to attend classes at least 50%.The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student produces for homework. Of particular importance for the final evaluation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform

	oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
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	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 and exercises			45		
	2. Preparation for the Colloquium / exam through self-study			45		
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	Maximum points	
		3 points	7 points	20 points	20 points	
	Seminar paper					

	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	4	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	
	50 – 64,9%		2 (sufficient)		D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE						
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media	
	Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport nad traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)			10	X	
5.2. . Additional literature (at the moment of changes and/or amended of study programme)	Tamara Polić: „The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students“, Department for traffic, Polytechnic of Rijeka, 2007. Adrian Pilbeam, Nina O`Driscoll: „Logistics Management“, Market Leader, Pearson Longman, 2010 A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University A.J. Thomson, A.V. Martinet:"A Practical English Grammar Exercises", Oxford University A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University			10	X (e-learning, handouts)	
5.3. Quality assurance methods that ensure the acquisition of	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					

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

PK-SP-2. Description of the new course or the course that has been supplemented and / or amended or updated.

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	INFORMATICS	1.8. Course code in ISVU	270677 / 270678
1.2. Course lecturer	Zvonimir Klarin, master of comp., lecturer	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 (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	To provide students with a fundamental understanding of the role and organization of information systems, the application of information technologies (IT) in business, and the acquisition of practical skills in using essential office tools. Students will gain basic technical knowledge in the field of IT, as well as the skills to understand and utilize modern information and communication technologies. Emphasis is placed on the practical application of acquired knowledge to prepare students for challenges in a professional environment.
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	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO7: Apply computer tools for analyzing and comparing data.
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.
	Learning outcomes according to the Bloom`s taxonomy: (up to two verbs per LO) Level of LO:

2.4. Expected learning outcomes on the course level		1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis
	1. Evaluate key aspects of information technology, computer architecture, and operating systems.	4
	2. Apply basic and advanced functions of Microsoft Office suite for business communication and organization.	3
	3. Create documents, presentations, and diagrams using appropriate tools.	4
	4. Manage email and calendar in a business environment.	4
	5. Apply functions and formulas in spreadsheets for data analysis and visualization.	3
	6. Create simple databases and use queries and reports for data analysis.	5

2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introduction to the course and detailed syllabus. Exercises: Familiarization with the e-learning system and webmail.	-	Attend lectures. Work on the computer to familiarize themselves with the course content and documents on the e-learning platform.	-	2 h
	2.	Introduction to information technology, history, and basics of computer architecture. Exercises: MS Word – Creating and formatting a seminar paper.	1, 2	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to create and format a seminar paper in MS Word.	4 h
	3.	Operating systems, software installation and management. Exercises: MS Word – Using styles and templates.	1, 2	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to use styles and templates in MS Word.	4 h

	4.	Cloud computing technologies and their application. Exercises: MS Word – Advanced formatting and working with images.	1, 2	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to use advanced formatting and work with images in MS Word.	4 h
	5.	Basics of creating presentations. Exercises: MS PowerPoint – Creating a presentation by editing the slide master.	2, 3	Attend lectures and read literature. Work on the computer.	In class/exercises and the oral exam, they know how to create a presentation by editing the slide master in MS PowerPoint.	4 h
	6.	Effective management of business communication and organization. Exercises: MS Outlook – Managing email and calendar.	2, 4	Attend lectures and read literature. Work on the computer.	In class/exercises and the oral exam, they know how to manage email and calendar in MS Outlook.	4 h
	7.	Introduction to diagram creation tools. Exercises: MS Visio – Creating a flowchart.	2, 3	Attend lectures and read literature. Work on the computer.	In class/exercises and the oral exam, they know how to create a flowchart using MS Visio.	4 h
	8.	Preparation for the midterm exam. Midterm Exam 1.	1, 2, 3, 4	Attend lectures and read literature. Work on the computer.	The midterm exam is taken on the computer.	30 h
	9.	Introduction to creating and formatting spreadsheets. Exercises: MS Excel – Creating and formatting Excel spreadsheet.	2, 5	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to create and format a worksheet in MS Excel.	4 h
	10.	Using formulas and functions in spreadsheets. Exercises: MS Excel – Applying formulas and functions.	2, 5	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to apply basic functions and formulas in MS Excel.	4 h
	11.	Data analysis and organization in spreadsheets. Exercises: MS Excel – Sorting, filtering, and analyzing data.	2, 5	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to sort, filter, and analyze data in MS Excel.	4 h

	12.	Data visualization in spreadsheets. Exercises: MS Excel – Creating charts based on worksheet data.	2, 6	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to create charts based on worksheet data in MS Excel.	4 h
	13.	Introduction to databases. Exercises: MS Access – Creating a simple database.	2, 6	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to create a simple database in MS Access.	4 h
	14.	Using queries and reports in databases. Exercises: MS Access – Using queries and reports.	2, 6	Attend lectures and read literature. Work on the computer.	In the midterm or written and oral exam, they know how to use queries and create reports in MS Access.	4 h
	15.	Final considerations/Review and preparation for the midterm and/or final exam. Midterm Exam 2.	2, 5, 6	Attend lectures and prepare individually for the exam. Take the exam on the computer.	The midterm exam is taken on the computer.	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 USB memory stick and their AAI@EduHr password. 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).					
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 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	2 (without written exam)	Seminar paper		Other	
	Class activity	1	Oral exam	1	Other	

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 and exercises			45	
	2. Preparation for the Colloquium / exam through self-study			75	
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	Activities in class	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
	4.4. Final grade according to absolute division	Percentage of acquired knowledge, skills and competences (teaching + final exam)		Numerical 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
	1. Foulkes, L. (2020). Learn Microsoft Office 2019: A comprehensive guide to getting started with Word, PowerPoint, Excel, Access, and Outlook. Birmingham: Packt Publishing Ltd.		5
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Habraken, J. (2021). Microsoft Office inside out (Office 2021 and Microsoft 365) (1st ed.). Microsoft Press.		-
	2. Brookshear, J. G., & Brylow, D. (2019). Computer science: An overview (13th ed., Global ed.). Pearson.		5
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Coures title	TRAFFIC AND ECOLOGY	1.8. ISVU course code	201135 / 202080
1.2. Coures lecturer	MSc Tanja Radić Lakoš, senior lecturer	1.9. MOZVAG course code	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Study year	1 st	1.13. Modernization	☐ yes ☒ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☐ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is that student, based on theoretical knowledge and case studies, be able to: Define basic ecological and environmental concepts; 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 secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.

	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.	
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
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).	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	LO of the Course	Content / Teaching Method	Evaluation	Time needed
	1.	Introduction to the course and a detailed performance plan	-	Listen to the lecture. On seminary teaching, by independent work on the computer students get acquainted with course content and documents on the e-learning course page.	-	2 h
		Fundamental Ecological principles.	1, 6, 7	Listen to the lecture and read the literature.	In a colloquy or written and oral exam students define fundamental ecological	4 h

					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.	
	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 members of the nutrition chain, and distinguish organisms with regard to the trophy.	4 h
	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 seminar paper (by independent use of computer programs).	10 h
	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	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	10 h

				acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	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).	
	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 the literature. At the seminar student individually explore the content of this topic area by searching the database and based on it and read literature students write seminar paper thus presenting the acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on the exposed topic is applied in the whole group.	In a colloquy or written and oral exam they can define and describe the types of fossil fuels and RES and choose and comment on the most environmentally acceptable solution. Created and Presented seminar paper (by independent use of computer programs).	4 h
	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 pollution, to predict the dynamics of water pollution along roads and to propose mitigation and / or rehabilitation measures. Solved case study.	8 h
	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 of it. Created and	1 h

					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

3.1. Students` obligations	In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquy seminar paper. Students who have during the course achieved: from 0 – 24,9% ECTS credits- is rated unsuccessful and cannot get ECTS credits and must re-enrol the subject in the next academic year; from 25 – 49,9% ECTS credits - is rated inadequate and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; more than 50% ECTS credits - students have the right to access the final exam of the subject. Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the lessons, creating mental map, solving

	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).					
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	3 (by submitting both colloquiums the student is relieved of a written and oral examination)	Seminar paper	0,5	Other (inscribe)	
	Class activities	0,5	Oral exam	1 (by submitting both colloquiums the student is relieved of an oral examination)	Other (inscribe)	
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 SYSTEM						
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
	50 – 64,9%		2 (sufficient)		D
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
	European Parliament and Council of the European Union: "White Paper - A Single European Transport Space Platoon - A Road to a Comprehensive Transport System Resourcefully Managing Resources", COM (2011) 144 final, 2011. Golubić, J.: Traffic and environment, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 1999. Radić Lakoš, T. Environmental management in Tourism, Polytechnic in Šibenik, Šibenik, 2022. (selected chapters)			5	Available On-line Available On-line
	Radić Lakoš, T.: Environmental management, Polytechnic of Šibenik, Šibenik, 2018. (selected chapters) Glavač, V.: Introduction to global ecology, Croatia University Edition, Zagreb, 2001. Udovičić, B.: Human and environmental, Kigen, Zagreb, 2009.			5 2	Available 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. information on the course
and contact with the teacher

It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any delay in teaching will be published on the e-learning pages of the course and on the web pages of the Šibenik University. Students can contact the teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is possible to ask questions by e-mail (from the official e-mail address from the domain @vus.hr) that will be answered in a short time (no later than five working days from the receipt of e-mail).

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TRAFFIC LOGISTIC	1.8. Course code in ISVU	140773 / 202084
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 30 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	LO10: Organize the transport process in the field of road transport.		
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.		
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.		
	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding,

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Distinguish the basic terms and divisions in logistics business.				4
	2.	Choose appropriate logistics processes necessary for organizing the transport of goods in logistics.				5
	3.	Categorize traffic and goods flows in urban areas.				4
	4.	Connect the means of transport and transport technologies necessary for the successful implementation of the transport process.				4
	5.	Suggest ways to successfully store, handle, reduce inventory holding costs, and distribute merchandise.				6
2.5. Course content according to detailed curriculum schedule	Constructive allignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 of the logistics system, logistics system division)	1	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students know how to define and distinguish basic concepts in logistics, types of logistics, factors of logistics development. Seminar paper created and presented (by computer programs).	4 h
	3.	Human resources in logistics (management, freight forwarders, FIATA documents, customs officers).	1	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	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	4 h

				presents the acquired knowledge and presents their own ideas, and ways to solve problems.	jobs, distinguish between customs documents, human resources working in logistics. Seminar paper created and presented (by computer programs).	
	4.	Warehouses and storage (concept, types and division, the factors for determining the location, equipment and furnishing warehouses, methods of storage operations)	1, 2, 5	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam students know how to define and differentiate the basic concepts of storage. Distinguish, describe and present warehouse equipment. Analyze and evaluate factors for determining location. Select, evaluate and categorize services in the warehouse business. List the rules and methods for storing goods. Seminar paper created and presented (by computer programs).	4 h
	5.	Warehousing and storage of products (video films)	1, 2, 5	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can distinguish, 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).	5 h
	6.	Freight terminals and Freight-transportation centers (concept and division, development goals of Freight-transportation center, functions, services, 3PL)	1, 2, 5	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	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	4 h

				presents the acquired knowledge and presents their own ideas, and ways to solve problems.	services provided at terminals and centers. Seminar paper created and presented (by computer programs).	
	7.	Information and communication system in the function of logistics (elements, methods of communication, modern computer programs, warehouse management system)	1, 2, 5	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can distinguish between information and communication technologies in logistics, warehouse management system, Bar code technology, and RFID identification. Identify the abbreviations of information and communication technologies. Establish the difference, strengths and the weakness of using it. Seminar paper created and presented (by computer programs).	4 h
	8.	Inventory management and manipulation with products (inventory planning and control, supply chain, packaging of goods, palletization and containerization)	1, 2, 5	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can propose ways of manipulating with products (packaging, palletizing) and reducing the cost of supplies (supply chain). Define and describe Supply Chain and Just in time procurement. Identify the difference between applying pallets and containers. Seminar paper created and presented (by computer programs).	4 h
	9.	Transportation in the logistics system (road, rail, air and pipeline transport, inland waterways transport, transport costs, transport documents)	1, 2, 4	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	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	5 h

				presents the acquired knowledge and presents their own ideas, and ways to solve problems.	transportation. Seminar paper created and presented (by computer programs).	
	10.	Modern transport technologies in transport logistics (conditions for development, integral transport, technologies on the road, rail, water, and air transport)	1, 2, 4	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students 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).	5 h
	11.	The computer program for stacking pallets STACKBUILDER	5	They use multimedia and network. Using a computer program, students arrange the shipments on the pallet and the means of transport. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students know distinguish information and communication technologies and computer programs in logistics. Use the computer program to choose the appropriate packaging, draw and analyze the optimal packaging on the pallet. Seminar paper created and presented (by computer programs).	5 h
	12.	Distribution and ordering of goods (concept, purpose, and structure of the distribution system, distribution networks, costs in distribution, term of the order, processes in ordering)	4, 5	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can define the terms of order and distribution. Propose the ways of orders in case of missing products. Determine the difference between physical distribution and distribution channels. Compare and explain	5 h

					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)	2, 3, 4	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can define the concept and the goal of city logistics. Distinguish and isolate participants in city logistics. Categorize flows of products in city logistics. Identify means of transport. Suggest city logistics concepts. Identify the advantages and disadvantages of optimizing the flow of products. Seminar paper created and presented (by computer programs).	5 h
	14.	Study trip to KONZUM or LIDL Logistics-distribution center (located in Dugopolje and Perušić).	1, 2, 3, 4, 5	-	On a study tour, students will be able to define and differentiate basic terms and divisions in logistics, warehousing, and freight forwarding. Select, evaluate and categorize services in the warehouse business. Compare and connect modes of product transport, organization of distribution of products. Suggest ways of manipulation with the products and reducing inventory costs.	5 h
	15.	Final considerations. Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	60 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 unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					
3.2. Student work monitoring (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 colloquiums)	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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Preparation for the Colloquium / exam through self-study			60		
4. GRADING SYSTEM						
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	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 writing	

		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.		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
	50 – 64,9%	2 (sufficient)	D
5. ADDITIONAL INFORMATION ABOUT THE COURSE			
5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding and Logistics Processes, Faculty of Transport and traffic sciences, University of Zagreb, Zagreb, 2010 (selected chapters)	-	City of Sibenik library
	Mlinarić Josip T.: Freight-transport Centers, Faculty of Transport and traffic 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 Sibenik University of Applied Sciences 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	BASICS OF ELECTRICAL ENGINEERING AND ELECTRONICS	1.8. Course code in ISVU	201136 / 202078
1.2. Course lecturer	MSc Danijel Mileta, title senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3
1.6. Year of study	1 st	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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 from the field of natural and technical sciences to problems in the field of road transport. IU9: Solve problems in the field of road transport using analytical methods.		
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs 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. Compare electrical and magnetic phenomena.					4
	4. Distinguish electronic components and basic electrical devices.					4
	5. Predict the results of electrical and magnetic interactions.					5
	6. Solve simple tasks in the field of electrostatics and electromagnetism.					3
2.5. Course content according to detailed curriculum schedule	Constructive allignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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	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,	4 h

					draw or sketch the same, and set and solve or calculate tasks on the topic of simple DC circuits.	
	5.	DC circuits	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 DC circuits, draw or sketch the same, and set and solve or calculate tasks on the topic of 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 basic concepts from the domain of luminaries.	1 h
	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	4 h

					describe the basic concepts of electromagnetism.	
	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

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%. Students who have achieved during the course: from 0 - 24,9% ECTS are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					
3.2. Student work monitoring (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	
	Esay		Report		Continuous check	
	Colloquiums	1	Seminar paper		(other)	
	Teaching activities		The oral part of exam	1	(other)	
3.3. Student work-load	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			60		
	2. Preparation for the Colloquium / exam through self-study			60		

4. GRADING SYSTEM

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	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

		and with frequent and repeated grammatical errors.		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
	Percentage of acquired knowledge, skills and competencies (teaching + final exam)		Numerical grade		ECTS grade

4.4. Formation of the final grade based on the absolute distribution	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	50 – 64,9%	2 (sufficient)	D
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
	Stanić, E.: "Basics of electrical engineering", School book, Zagreb	3	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Kulišić, P. : "Physics 2", School book, Zagreb Pinter, V. : "Basics of electrical engineering 1 and 2", Technical book, 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 an amended and/or changed or modernized course.

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	OPERATIONAL RESEARCH IN TRAFFIC	1.8. ISVU course code	201138 / 202091
1.2. Course lecturer	Ivana Beljo, grad. eng. math., univ. spec. oecc., senior lecture	1.9. MOZVAG course code	-
1.3. Assistants and/or associates	PhD Ana Perišić, colleague professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 15 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1 st level – materials available on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Study year	2 nd	1.13. Modernization	☐ yes X no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The objective of the course is for students acquire knowledge and skills in analytical thinking, as well as logical reasoning and interpreting results for further education. The goal of the course is for students to be equipped, based on theoretical knowledge and case studies, to understand, comprehend, recognize, and apply various quantitative methods for solving specific problems and methods for optimizing such problems..
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study programme level	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO7: Apply computer tools for analysing and comparing data.
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.
	LO9: Solve problems in the field of road transport using analytical methods.

2.4. Expected learning outcomes on the course level	Learning outcomes according 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. Formulate a mathematical model for linear optimization problems.					6
	2. Solve optimization problem with graphical method.					4
	3. Apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.					3, 5
	4. Choose the appropriate algorithm and solve the problem on network.					3, 4
	5. Design a model for project management and recommend optimal savings by cutting the duration of activities.					6, 5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.	-	2 h
	2.	Formulate a mathematical model	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model.	3 h
	3.	Linear programming	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model.	3 h
	4.	Linear Programming Problems. Graphical solution	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to model a linear programming problem and sketch a	3 h

					graph and solve an optimization problem.	
	5.	Solving linear programming problems: The Simplex method. The Excel Solver	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to model the linear programming problem and solve the problem with the simplex method and using the Solver and recommend the optimal solution.	3 h
	6.	Postoptimality analysis	1, 2, 3	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model and apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	3 h
	7.	The Transportation problem.	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to define and describe the transport problem, distinguish between open and closed transport problem., and set the model.	3 h
	8.	Northwest corner rule, Minimum prices method, Vogel's approximation method, Russel's approximation method	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve the transportation problem using the northwest corner rule, minimum prices method, and Vogel's and Russel's approximation methods.	3 h
	9.	The Assignment Problem	1, 3	Attending lectures. Actively involving students through problem solving and discussion.	In colloquium or written and oral exams students know how to solve the transport problem and the assignment problem.	3 h
	10.	An Overview of Various Applications of Linear Programming Methods in Practical Examples. Exam preparation	1, 2, 3	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model, apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	3 h

	11.	Network Optimization Models. The shortest-path problem. The minimum spanning tree problem.	4	Attending lectures. Actively involving students through problem solving and discussion.	Students will choose the appropriate algorithm and solve the problem on network.	3 h
	12.	The maximum flow problem. The minimum cost flow problem.	4	Attending lectures. Actively involving students through problem solving and discussion.	Students will choose the appropriate algorithm and solve the problem on network.	3 h
	13.	Project Management with PERT/CPM	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will design a model for project management and recommend optimal savings by cutting the duration of activities.	3 h
	14.	Dynamic Programming	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will propose optimal business decisions using dynamic programming methods.	3 h
	15.	Final conclusions. Exam preparation.	1, 2, 3, 4, 5	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	-	3 h

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	Student obligations are prescribed by the Study Regulations. It is recommended that students actively participate in classes, which includes engaging in discussions, solving tasks, etc. Students who are unable to attend classes regularly should consult with the professor during consultation hours or via email (ivana.beljo@vus.hr , ana.sisak@vus.hr). It is the responsibility of each student to stay informed about the conduct of classes. All announcements regarding the conduct or possible postponement of classes will be posted on the website of the Šibenik University of Applied Sciences or the course webpage, where all information about the course, as well as teaching materials and a list of literature, can also be found. Students can pass the final exam in the course in two ways: a) during the course through continuous student assessment (active participation in classes and two colloquiums). Students who do not meet some of the learning outcomes are required to take the oral part of the exam. b) during the course (active participation in classes) and by taking the exam (written and oral exam).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points)	Attendance	0,5	Written exam	2 (without colloquium)	Project	
	Experimental work		Research		Practical work	

corresponds to the credit score of the course)	Essay		Report		Continuous examination	0,5
	Colloquium	2,5 (without written and oral exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	0,5 (without colloquium)	Other	
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:					
	Obligation			Hours (estimate)		
	1. Attending classes and exercises			45		
	2. Preparation for the Colloquium / exam through self-study			65		
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	Activities in class	Preparation for teaching units; Understanding previous content; Participation in solving tasks together: 0 – 20 points				
	Seminar papers	-				
	Colloquium/written exam	Preparation/learning; Scoring and grading according to correct answers in the test: 0 – 80 points (min 40 points)				
	Oral exam	Preparation/learning; additional verification of unachieved learning outcomes				
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
	50 – 64,9%	2 (satisfactory)	D

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Pašagić, H., Ivanković, B., Kapetanović, N.: Mathematical methods in traffic, Zagreb, 2004.	3	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Neralić, L.: Introduction to Mathematical Programming 1, Zagreb, 2012. Hillier F., Lieberman G.: Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed.		
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	BASICS OF MECHANICAL ENGINEERING	1.8. Course code in ISVU	270680 / 270681
1.2. Course lecturer	Luka Olivari, master of mech., senior lecturer	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	7
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim 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: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO9: Solve problems in the field of road transport using analytical methods.		
	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding,

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Differentiate concepts, physical quantities, and units of measurement in the field of basic mechanical engineering.				4
	2.	Comment on the characteristics and properties of materials, as well as the procedures for testing material properties.				5
	3.	Calculate material stress and deformations due to loading.				5
	4.	Dimension machine elements based on sizing criteria.				5
	5.	Formulate expressions for the transmission ratio and power losses in complex power and motion transmission systems.				6
	6.	Differentiate the concepts and laws of thermodynamics, and select appropriate principles for solving a given problem.				5, 5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	2.	Technical Materials, Material Structure, Material Properties	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	3.	Types of Loads and Stresses, Deformations Due to Loading	1, 2, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks.	At the colloquium or the written and oral exam, students: differentiate concepts	4 h

				Independent task solving. Individual preparation for colloquiums.	from statics; solve numerical problems from the specified unit.	
	4.	Basics of Mechanical Properties Testing of Materials	1, 2, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	5.	σ - ε Diagram, Allowable Stress and Safety Factor, Stress Concentration	1, 2, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	6.	Moment of Resistance and Moment of Inertia of a Surface, Hardness and Hardness Testing	1, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	7.	Creep and Creep Testing, Toughness and Toughness Testing, Dynamic Endurance	1, 3, 4	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	8.	Classification of Machine Elements, Fasteners, Power and Motion Transmission Elements	1, 4, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	9.	Machine Elements: Springs, Shafts, Axles, Bearings	1, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	10.	Machine Elements: Couplings, Gear Transmission, Belt Transmission, Chain Transmission	1, 5	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	11.	Introduction to Thermodynamics, Kinetic	1, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks.	At the colloquium or the written and oral exam, students: differentiate concepts	4 h

		Molecular Theory, State Variables		Independent task solving. Individual preparation for colloquiums.	from statics; solve numerical problems from the specified unit.	
	12.	Heat Conduction, Laws of Thermodynamics	1, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	13.	Equation of State of an Ideal Gas, Changes in Gas States	1, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	14.	Cycle Processes, Internal Combustion Engine Cycle Processes	1, 6	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	15.	Review, recapitulation, and preparation for the exam.	1, 2, 3, 4, 5, 6	Listen to lectures and read literature. 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 are required to bring a calculator and other equipment necessary for solving tasks and participating in lectures and exercises. Students who achieve the following during the course: From 0 to 49.9% of ECTS credits - are graded fail and must take and pass a written exam (test). More than 50% - students earn the right to take the final exam for the course. Students can pass the final exam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the written and oral parts of the exam.					
3.2. Student work monitoring (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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:			
	Obligation		Hours (estimated)	
	1. Attending classes		60	
	2. Colloquiums and written exam individual preparation		60	
3. Oral exam individual preparation		30		
4. GRADING SYSTEM				
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
	50 – 64,9%		2 (sufficient)		D
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
	Đuranović S., Olivari L.: Basics of mechanical engineering II edition, Polytechnic of Šibenik, Šibenik, 2021.			-	on-line (e-learning)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from the lectures and exercises on the e-learning system of the Šibenik University of Applied Sciences for the course Basics of Mechanical Engineering.			-	on-line (e-learning)
	Vrhovski, D., Nikšić, M.: Mechanical engineering. Collection of solved tasks, Faculty of Transport and Traffic Sciences, University of Zagreb, Zagreb, 2005.			5	-
	Perše, S., Višnjić. V.: Mechanical engineering in traffic, Faculty of Transport and Traffic Sciences, University of Zagreb, Zagreb, 2005.			10	-
5.3. Quality assurance methods that ensure the acquisition of	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				

knowledge, skills and competences	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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	ENGLISH LANGUAGE III	1.8. Course code in ISVU	140775 / 202089
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	Ivana Jardas Duvnjak, professor, title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(15 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim of the course is to expand the vocabulary related to road and postal traffic as well as predicted grammatical structures that include tenses, the creation and use of passives, causative constructions, mastery of conditional sentences, transformation of direct into reported speech in the past. The aim is also to expand the vocabulary related to traffic, while exercises determine and practice grammar and new vocabulary. Another goal of the course is to write different kinds of business letters. By attending a foreign language classes, students are introduced with new communication systems, enabling their easier and more direct involvement in world events and getting acquainted with the elements of English culture and civilization of the English speaking world. Learning a foreign language is in line with the aspiration to preserve the richness of the diversity of multi-faceted Europe as well as with fostering the development of the culture of dialogue and civilization.		
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF, Completed course English language II		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.		
	LO3: Independently and responsibly analyse the relevant literature necessary for decision-making.		

	Learning outcomes according 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 apply and link terms from the professional terminology of English road traffic and use them in written and oral communication.				3
	2.	to apply grammatical structures in texts and assignments and real-life context.				3, 4
	3.	to present own ideas for development of traffic problems.				5, 6
	4.	to develop an essay within the topics of the course.				3
	5.	to communicate in a foreign language within the subjects of the course, to express one own opinions.				6
	6.	to compare and evaluate different traffic solutions.				5
	7.	to use part of the general language competency at levels B1/B2.				6
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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	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	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, Present times	1, 2, 3	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.	Early Carriages - The Passive Voice, Past times	1, 2, 3, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of	4 h

					other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	6.	Trade And Transport In The Turnpike Era - The Passive Voice, Future times	1, 2, 3, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to 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	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 colloquium	1, 2, 3, 5, 6	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	10 h

					the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	9.	The Satellite - The Infinitive and the Gerund	1, 2, 3, 5, 6	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.	Technology And The Relation Between Transport And Communication - Conditional Sentences (0 And I Type)	1, 2, 3, 5, 6	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 -	1, 2, 3, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real	10 h

		Conditional Sentences (II Type)			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.	
	12.	Navigation Devices - Conditional Sentences (III Type)	1, 2, 3, 4, 5, 6, 7	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	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.	Scientific Road Making - Conditional Sentences	1, 2, 3, 4, 5, 6, 7	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 colloquium	1, 2, 3, 4, 5, 6, 7	Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	10 h

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70% is required. Part-time students are required to attend classes at least 50%.The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written word that the student produces for homework. Of particular importance for the final evaluation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly

	inform oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
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	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 and exercises			45		
	2. Preparation for the Colloquium / exam through self-study			45		
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	Maximum points	
		3 points	7 points	20 points	20 points	

	Seminar paper				
	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	4	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	
	50 – 64,9%		2 (sufficient)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
	Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)			10	X
5.2. . Additional literature (at the moment of changes and/or amended of study programme)	Tamara Polić: „The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students“, Department for traffic, Polytechnic of Rijeka, 2007. Adrian Pilbeam 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 (e-learning, 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	INFORMATION SYSTEMS IN ROAD TRAFFIC	1.8. Course code in ISVU	142540 / 202105
1.2. Course lecturer	MSc Danijel Mileta, title senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	IU1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	IU3: Independently and responsibly analyze the relevant literature necessary for decision-making.		
	IU4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	IU6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.		
	IU8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	IU13: Monitor trends in the development of technology, techniques, and road transport safety.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs 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 allignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 transport systems at the midterm, written and oral exam.	3 h
	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	3 h

					Internet, intranet and extranet, and give an example.	
	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, categorize, compare, judge and evaluate highway billing systems.	1 h
	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	2 h

					propose the right solution for a particular need.	
	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

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 are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					
3.2. Student work monitoring (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 colloquiums)	Project	
	Experimental work		Research		Practical work	
	Esay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)	
	Teaching activities		The oral part of exam	0,5	(other)	
3.3. Student work-load	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		60			
	2. Creating and Presenting seminar paper		16			
	3. Preparation for the Colloquium / exam through self-study		44			

4. GRADING SYSTEM

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

		The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.	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 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	
	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
	50 – 64,9%	2 (sufficient)	D
5. ADDITIONAL INFORMATION ABOUT THE COURSE			
5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Bošnjak I.: Intelligent transport systems, Faculty of transport and traffic sciences, University of Zagreb, (selected chapters)	3	
	Mileta D.: Electronic business (selected chapters)		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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	URBAN MOBILITY	1.8. Course code at ISVU	284493 / 284494
1.2. Course lecturer	PhD Marko Slavulj, associate professor	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 program (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd 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	2 nd	1.13. Modernization	☐ yes ☒ no
1.7. Credit point (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is to provide students with basic knowledge about urban mobility planning and train them to collect and interpret traffic indicators necessary for the analysis of mobility in cities with a proposal for improvement measures.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study program level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.

	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.					
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.					
	LO12: Critically assess the organized transport process.					
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.					
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy:					Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis
	1.	to interpret the terminology of urban mobility.				3
	2.	to establish a difference between mobility and accessibility.				4
	3.	to analyze and understand the concept of sustainable urban mobility planning.				4
	4.	to distinguish between the advantages and disadvantages of different modes of travel.				4
	5.	to plan and evaluate sustainable urban mobility measures.				5, 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 needed
	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

		Basic terminology of urban mobility.	1, 6	Listen to lectures and read literature.	In colloquium or the written and oral exam they define and describe the basic terminology of urban mobility.	2 h
	2.	Conceptual distinction between mobility and accessibility.	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 explain and differentiate between mobility and accessibility.	3 h
	3.	Mobility and sustainability. Indicators of urban mobility.	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 explain sustainable mobility and specify and explain indicators of urban mobility.	3 h
	4.	The concept of sustainable urban mobility planning.	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 understand the concept of sustainable urban mobility planning. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h
	5.	Legislation and guidelines for planning sustainable urban mobility.	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 content of guidelines for sustainable urban mobility planning and legislation. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h
	6.	Analysis of urban mobility.	1, 2, 3, 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 can analyze modes of urban mobility.	3 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.	Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	
	7.	Development of a sustainable urban mobility strategy.	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 understand the importance of creating different scenarios and defining a common vision of sustainable urban mobility while monitoring selected indicators. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h
	8.	Planning sustainable urban mobility measures. 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 know how to plan and evaluate sustainable urban mobility measures.	23 h
	9.	Pedestrian traffic.	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 know how to state the users of walking as one of the modes of travel, make division of pedestrian areas, analyze the speed and flow of pedestrians, and explain the role of pedestrian traffic in sustainable urban mobility plans. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h
	10.	Bicycle traffic.	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 state the division of cyclists, cycling infrastructure, cycling road capacities and explain the role of cycling in sustainable urban mobility plans. Seminar work is organized in groups, with discussion and	3 h

					proposing measures for possibilities of improving urban mobility.	
	11.	Public transport and urban mobility.	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 modes of public transport and explain the role of public transport in sustainable urban mobility plans. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h
	12.	Shared mobility.	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 can conclude how shared mobility fits into the context of the sharing economy, determine the advantages of shared mobility, analyze different modes of shared mobility, and recommend policies and business models that support shared mobility. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h
	13.	Mobility and urban traffic safety.	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 can explain the role of road traffic safety as a basic element of sustainable urban mobility planning and the concept of a strong safety approach and state the principles of sustainable urban mobility planning in the context of road traffic safety. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving urban mobility.	3 h

	14.	Sustainable urban logistics planning. 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 can explain the problems created by urban freight transport, the environment and stakeholders involved in the organization of urban freight transport, delivery distribution channels and facilities for freight delivery, freight distribution strategies for urban logistics, the sustainable urban logistics plan (SULP) and measures for better organization of urban freight transport.	23 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 they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% students have the right to take the final exam. Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two colloquiums); 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		Oral exam	1	Other	
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:					

	<i>Obligation</i>		<i>Hours (estimate)</i>	
	1. Attending classes		60	
	2. Creating and solving the traffic process		15	
	3. Preparation for the Colloquium / exam through self-study		45	
4. GRADING SYSTEM				
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 colloquium / 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 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	
	50 – 64,9%		2 (sufficient)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Required literature (available in the library and through other media)	Title			Number of copies in the library	Availability via other media
	Rupprecht Consult - Forschung & Beratung GmbH, Guidelines for the Development and Implementation of a Sustainable Urban Mobility Plan, Second Edition. Cologne; 2019.			3	Yes
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Štefančić, G.: Technology of public (urban) city traffic II, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2010			0 0 0	Yes
	Štefančić, G.: Technology of public (urban) city traffic I, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2008				No
	Enoch, M.: Sustainable Transport, Mobility Management and Travel Plans, Ashgate, England, Surrey, 2012				No

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

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TRAFFIC CORRIDORS AND MERCHANDISE FLOWS	1.8. Course code in ISVU	140771 / 202099
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	PhD Luka Vukić, associate professor	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 30 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.		
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.		
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.		
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.		
	Learning outcomes by Bloom: (maximum 2 verbs 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.	Distinguish the main factors that determine the emergence of commodity flows in the world.				4
	2.	Connect the transport sectors and the commodity flows that take place along them.				5
	3.	Identify the most important transport corridors in Europe and the Republic of Croatia in all transport sectors.				4
	4.	Present the activities of the EU Marco Polo program.				6
	5.	Compare the values of exports and imports of goods in the modern world and in the Republic of Croatia.				4
	6.	Critically assess the items of the latest published EU White Paper on Transport.				5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 (General geo-traffic factors, natural predispositions, socio-economic factors)	1	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam students know 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).	5 h

	3.	The development of transport on land (development of road, rail, and pipeline transport)	2	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or written and oral exam students know to present and comment on the historical development of transport on land. Analyze and evaluate the merchandise trade in land traffic, in the world. Seminar paper created and presented (by computer programs).	5 h
	4.	The development of transport on land (development of road, rail, and pipeline transport)	2	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or written and oral exam students know to present and comment on the historical development of transport on land. Analyze and evaluate the merchandise trade in land traffic, in the world. Seminar paper created and presented (by computer programs).	5 h
	5.	The development of transport on the water (history, World and European ports, shipping routes, ships for freight)	2	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam students 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 routes. Seminar paper created and presented (by computer programs).	5 h
	6.	The development of transport on the water (video films about merchandise and traffic flows in maritime traffic)	2	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 written and oral exam students know present seaports in the world. Identify and distinguish terminals at the seaport.	5 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.	Analyze and evaluate the cargo traffic of the seaport. Categorize seaports, ships, regions, and routes. Seminar paper created and presented (by computer programs).	
	7.	The development of traffic in the air (types of aircraft, aircraft manufacturers, airlines, airports and routes)	2	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or written and oral exam students know to present and comment on the historical development of traffic in the air. Analyze and evaluate the merchandise in air traffic in the world. Categorize airports and airlines. Seminar paper created and presented (by computer programs).	5 h
	8.	Transport corridors in Europe (Trans-European transport network, transport corridors in Western and Northern Europe, Pan-European transport corridors, pipeline corridors, inland waterways)	3	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or written and oral exam students know state and compare the main transport corridors in all parts of Europe and all branches of transport. Define the term of traffic corridor. List the countries through which each transport corridor passes. Seminar paper created and presented (by computer programs).	4 h
	9.	Merchandise and traffic flows in the modern world (Concept and characteristics of traffic flow, commodity flows of food, raw materials, and industrial products)	1, 5	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students 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.	5 h

					Seminar paper created and presented (by computer programs).	
	10.	Merchandise and traffic flows in the modern world (Concept and characteristics of traffic flow, commodity flows of food, raw materials, and industrial products)	1, 5	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students 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).	4 h
	11.	Transport corridors in the Republic of Croatia (Geographical location, traffic directions, traffic corridors in the road, rail, air, water, and pipeline transport)	3	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can 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).	4 h
	12.	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)	1, 5	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam students 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	5 h

					created and presented (by computer programs).	
	13.	Marco Polo Program (program objective, program activities, program projects)	4	They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can define the goal and strategy of the Marco Polo program. Distinguish activities Marco Polo. Critically evaluate the professional video films program. Seminar paper created and presented (by computer programs).	4 h
	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	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or written and oral exam, students 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).	4 h
	15.	Final considerations/Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	60 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 unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					
3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total	Attending classes	1	Written exam	1 (without colloquiums)	Project	
	Experimental work		Research		Practical work	

number of ECTS credits corresponds to the course credit value)	Esaaay		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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Preparation for the Colloquium / exam through self-study			60		
4. GRADING SYSTEM						
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. Grading 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	
	Percentage of acquired knowledge, skills and competencies (teaching + final exam)		Numerical grade		ECTS grade	
4.4. Formation of the final grade based on the absolute distribution	90 – 100%		5 (excellent)		A	
	80 – 89,9%		4 (very good)		B	
	65 – 79,9%		3 (good)		C	
	50 – 64,9%		2 (sufficient)		D	

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Šego Darijo: Traffic corridors and merchandise flows, Script for internal use, Polytechnic of Sibenik, Šibenik 2016.	-	e-learning system
	Strategy for Transport Development of the Republic of Croatia for the Period 2014-2030. (selected chapters)		Internet website 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) Central Bureau of Statistics of the Republic of Croatia https://www.dzs.hr/		Internet website 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 Sibenik University of Applied Sciences 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
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.		Internet website Internet website
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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	INTERNAL TRANSPORT AND STORAGE	1.8. Course code at ISVU	140768 / 202096
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd 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	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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 CROQF.
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO9: Solve problems in the field of road transport using analytical methods.
	L10: Organize the transport process in the field of road transport.
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.

2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy: (maximum 2 verbs for LO)	Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1. distinguish between basic concepts in internal transport and storage.	4
	2. choose types of warehouses, equipment and means of internal transport and storage according to the type of goods.	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 internal transport and storage costs.	4
	6. calculate the required number of pallets and forklifts.	3
	7. connect the technological processes of internal transport and storage in production and distribution.	6

2.5. Course content according to detailed curriculum schedule	Constructive allignement					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	They listen to a lecture. They are introduced to the course content and documents on the e-learning page of the course as well as the literature available in the library.	-	1 h
		The term, goal, structure and function of internal transport.	1	They listen to a lecture and read literature. In the exercise classes, they explain and comment on the necessary expressions for the calculations.	At the colloquium or written and oral exam they differentiate the basic terms in the internal transport and storage.	3 h
	2.	Roads and material flows in internal transport and storage.	1, 3, 4	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or the written and oral exam they can distinguish between traffic junctions and internal traffic routes and comment on material flows	6 h

					in production and public warehouses. They know how to examine warehouse capacity and utilization of warehouse space. Calculate the usable storage area.	
	3.	Types, designs and purposes of the warehouse.	2, 4	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or the written and oral exam they know how to choose the type of warehouse according to the type of goods. Calculate storage capacity.	9 h
	4.	Field teaching WINERY ŠIBENIK	3, 4, 7	They are listening to a lecture. (Tour of the winery and warehouse. Monitoring of the process of wine production and transshipment machinery used. Depalletizers in the production process. Monitoring of the process of preparation of goods for storage (palletizers) and the method of stacking goods in the warehouse. The method of experiential learning and learning by self-discovery is applied. The method of brainstorming and the method of discussing technological processes and transshipment mechanization in internal transport and storage are applied on the examples of expert visits. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they are able to comment on and connect the technological processes and equipment in production and storage. Calculate the degree of free storage area.	4 h
	5.	Storage equipment.	1, 2, 4	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they can differentiate and choose warehouse equipment. They know how to calculate the area and volume of a ground-level warehouse and the area and free height of a warehouse floor in a multi-storey warehouse.	6 h
	6.	Field teaching PORT OF ŠIBENIK	3, 4, 7	They are listening to a lecture. (Tour of warehouses and docks, transshipment	At the colloquium or written and oral exam, they are able to comment on and	4 h

				machinery, monitoring of storage and transshipment processes from railway wagons, trucks and ships). The method of experiential learning and learning by self-discovery is applied. The method of brainstorming and the method of discussing technological processes and transshipment mechanization in internal transport and storage are applied on the examples of expert visits. In the exercises classes, they solve the tasks using the analytical method.	connect internal transport and storage, as well as equipment for transshipment and control of the amount of cargo. They know how to calculate the capacity of one-time storage of the warehouse and the total area of the warehouse.	
	7.	Field teaching Roto dinamic d.o.o. Šibenik	3, 6, 7	They are listening to a lecture. (Tour of a national distributor of food and beverages. Familiarization with the technological process of storage and distribution of finished products and commissioning). The method of experiential learning and self-discovery learning is applied. The method of brainstorming and the method of discussing technological processes and transshipment mechanization in internal transport and storage are applied on the examples of expert visits. During the exercises, they carry out the procedures of storage, commissioning and issuing of goods.	At the colloquium or written and oral exam, they are able to comment on and connect the technological processes of internal transport and storage in the distribution of goods. They know how to calculate the capacity of one-time storage of the warehouse and the total area of the warehouse.	14 h
	8.	Economics of internal transport and storage.	1, 4, 5	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they are able to distinguish between basic concepts for measuring and monitoring the success of internal transport and warehousing operations and the costs of internal transport and warehousing by origin. They are able to calculate the throughput capacity of a	7 h

					warehouse and the intensity of warehouse operations.	
	9.	Repetition and preparation for the colloquium. Colloquium I.	1, 2, 3, 4, 5, 7	They listen to lectures and read literature. They prepare individually for the colloquium.	-	20 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, 6	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they can distinguish the basic terms of the information and communication system in internal transport and storage and explain the role of the information system in business decisions. They can distinguish key elements for designing the construction or adaptation of a warehouse. Comment on the principles of warehouse operation and warehousing procedures. They can calculate the required number and carrying capacity of forklifts.	7 h
	11.	Means and tools for internal transport and storage.	1, 2, 6	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they know how to distinguish and choose the means for gripping, lifting, transferring, lowering and putting down loads. They know how to distinguish and choose means for internal transport of loads and means for packing, unpacking and checking loads. Calculate the required number of flat pallets.	15 h
	12.	Field teaching "MLINAR" factory in Šibenik	3, 6, 7	They are listening to a lecture. (Introduction to automation of technological processes. Storage	At the colloquium or written and oral exam, they are able to comment on and	4 h

				of raw materials and storage of finished products). The method of experiential learning and self-discovery learning is applied. The method of brainstorming and the method of discussing technological processes and transshipment mechanization in internal transport and storage are applied on the examples of expert visits.	connect internal transport and storage and production automation. Calculate how many goods may be stacked on a flat pallet.	
	13.	Design of internal transport and storage.	3, 6	They listen to a lecture and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they are able to comment the activities in the design of internal transport and storage in production and public warehouses, and to comment the methods of placing goods in the warehouse. Calculate the required number of box pallets.	7 h
	14.	Automated storage and picking systems.	1, 2, 7	They listen to lectures and read literature. In the exercises classes, they solve the tasks using the analytical method.	At the colloquium or written and oral exam, they know how to distinguish and choose equipment for automated storage and picking of goods. Calculate how much goods are in box pallets.	8 h
	15.	Repetition and preparation for the colloquium. Colloquium II. Concluding considerations. Repeating and preparing for the exam.	1, 2, 3, 6, 7	They listen to lectures and read literature. They prepare individually for the colloquium. 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 unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Students can pass the final exam in the course in two ways:

	a) during classes through continuous monitoring of students (active participation in classes and two colloquia); b) during classes (active participation in classes) and taking 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	4 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	4 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	0,5	Other	
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:					
	Obligation			Hours (estimated)		
	1. Active class attendance			60		
	2. Preparing colloquia or exams through individual work			90		
4. GRADING SYSTEM						
4.1. Evaluation of a seminar work	-					
4.2. Grading of the colloquium / 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.	
	Active attendance	70-75% of the presence	76-86% of the presence	87-100% of the presence	Case studies resolved	
		2 points	5 points	10 points	20 points	

4.3. Forming the final grade according to the evaluation elements	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
	Oral part of the exam	25 points	30 points	35 points	40 points
		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					
5.1. Required literature (available in the library and through other media)	Title			Number of copies in the library	Availability via other media
	Rogić K., Warehouse Systems Management, University of Zagreb, Faculty of transport and traffic sciences, Zagreb, 2018. (selected chapters)			3	
	Dundović Č., Hess S.: Internal transport and storage, University of Rijeka, Faculty of Maritime Studies, Rijeka, 2007.			3	
	Miloš I.: Internal transport and storage, Polytechnic of Rijeka, Rijeka, 2003.			1	
	Boris Ribarić: Examples of solved tasks in the subject of handling machinery, University of Zagreb, Faculty of transport and traffic sciences, Zagreb, 1994 (selected chapters)			0	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Prikrl B., Božičević D.: Transshipment and storage mechanization, Faculty of transport and traffic sciences, University of Zagreb, 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	LOGISTIC AND SUPPLY CHAINS	1.8. Course code in ISVU	284483 / 284484
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	PhD Dijana Mečev, colleague professor Luka Olivari, master of mech, senior lecturer	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 30 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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 and supply chain, identify and overcome processes in supply chain which are related to the storage, transport, purchase, stocks, retail, inventory and reverse logistics, mastering the modern logistics concepts and strategies.		
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: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.		
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	LO10: Organize the transport process in the field of road transport.		
	LO12: Critically assess the organized transport process.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs for LO)					Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Distinguish basic concepts and divisions in logistics and supply chain.				4
	2.	Choose the right types of goods procurement and inventory management strategies to optimize costs.				5
	3.	Identify points of sale and logistics processes in retail.				4
	4.	Differentiate between classes of vehicle routing problems and solution methods				4
	5.	Identify similarities and differences between types of demand in the supply chain.				4
	6.	Categorize logistics centers and key areas of reverse logistics in the supply chain.				4
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 of the logistics system, logistics system division)	1	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.	At the colloquium or the written and oral exam, students know how to define and distinguish basic concepts in logistics, types of logistics, and factors of logistics development. Seminar paper created and presented (by computer programs).	4 h

	3.	The term of Supply chain (concept, jobs, goal, structure, information technologies, e-commerce)	1	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.	At the colloquium or the written and oral exam, students know how to define the basic terms of Supply chain. List the tasks that are performed in the supply chain. To divide the functional stages and cycles. Distinguish information technologies for the supply chain management. Explain E-commerce. Seminar paper created and presented (by computer programs).	4 h
	4.	Purchase in the supply chain (goal, organization and processes, types of purchase, purchase system Just in time)	1, 2	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.	At the colloquium or the written and oral exam students know how to define the basic terms of purchase. Indicate the goal and purpose of the purchase. Distinguish and explain the processes in purchase. Explain the purchase system Just in time. Seminar paper created and presented (by computer programs).	4 h
	5.	Inventories (stocks) in the supply chain (term, concept, function, types, management strategies, costs)	1, 2	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.	At the colloquium or written and oral exam, they know the concept of stock. Explain the function of stocks in the supply chain. Distinguish and categorize stock types. List and comment on inventory management strategies. Categorize and break down inventory holding costs. Seminar paper created and presented (by computer programs).	4 h
	6.	Demand management in the supply chain (role and cost)	5	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 written and oral exam, they know how to identify and differentiate costs in	4 h

		forecasting, methods and factors for prediction)		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.	forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Critically judge types of demand. Seminar paper created and presented (by computer programs).	
	7.	Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)	1, 6	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.	At the colloquium or written and oral exam, they know how to define the term of Logistics Center. Explain the role of the logistics center in the supply chain. Distinguish and categorize the types of logistics centers. Highlight the advantages of using a warehouse management system. Identify and plan key business processes. Seminar paper created and presented (by computer programs).	5 h
	8.	Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)	1, 6	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.	At the colloquium or written and oral exam, they know how to define the term of Logistics Center. Explain the role of the logistics center in the supply chain. Distinguish and categorize the types of logistics centers. Highlight the advantages of using a warehouse management system. Identify and plan key business processes. Seminar paper created and presented (by computer programs).	4 h
	9.	Transport in the supply chain (road, rail, air, and internal	4	They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the	At the colloquium or written and oral exam, students know isolate types of transportation in the supply	4 h

		transport and transmission, costs in transport, shipping documents)		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.	chain, in all branches of transport. Identify the advantages, disadvantages and costs of transportation. Suggest the type of transport for individual goods. Seminar paper created and presented (by computer programs).	
	10.	Vehicle routing (practical application, classification, and elements of a vehicle directing problem)	4	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.	On a colloquium or written and oral exam, they know how to single out the types of transport in the supply chain, in all branches of traffic. Establish a practical application of vehicle routing for the selected route. Seminar paper created and presented (by computer programs).	5 h
	11.	Route optimization (vehicle route optimization methods and transportation cost reduction, problem complexity, solving methods)	4	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.	On a colloquium or written and oral exam, optimization methods are known. Compare, and establish similarities/differences in the reduction in transportation costs. Seminar paper created and presented (by computer programs).	5 h
	12.	Route optimization (vehicle route optimization methods and transportation cost reduction, problem complexity, solving methods)	4	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.	On a colloquium or written and oral exam, optimization methods are known. Compare, and establish similarities/differences in the reduction in transportation costs. Seminar paper created and presented (by computer programs).	4 h

	13.	Logistics in retail (concept, types of stores, logistics processes in retail)	6	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.	At the colloquium or written and oral exam, students know how to define the concept of trade and retail. Compare and comment on the largest retail chains. Identify and distinguish types of retail stores. Recognize and differentiate logistics processes in retail. Seminar paper created and presented (by computer programs).	5 h
	14.	Reverse logistics (concept, goal, carriers, recycling, design of return logistics system)	3	They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or written and oral exam, students know how to define the concept of reverse logistics. List and distinguish the carriers of reverse logistics. Identify factors for designing a reverse logistics system. Recommend the best options for returning goods or products. Seminar paper created and presented (by computer programs).	5 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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					
3.2. Student work monitoring (enter the share of ECTS credits)	Attending classes	1	Written exam	1 (without colloquiums)	Project	

for each activity so that the total number of ECTS credits corresponds to the course credit value)	Experimental work		Research		Practical work	
	Essay		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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Preparation for the Colloquium / exam through self-study			90		
4. GRADING SYSTEM						
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. Grading 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 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	
	50 – 64,9%		2 (sufficient)		D	

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding and Logistics Processes, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2010 (selected chapters)	-	
	Prester J.: Supply chain management, Sinergija, Zagreb, 2012.	2	City of Sibenik library
	Bloomberg D.: Logistics, MATE, Zagreb School of Economics and Management, Zagreb, 2006 (selected chapters)	2	City of Sibenik library
	Crkvenčić M., Buntak K., Krpan Lj.: Supply chain management, University NORTH, Koprivnica, 2018.	-	PDF (Internet website)
	Regodić D.: LOGISTICS Supply chains, University of Singidunum, Belgrade, 2014.	2	
	Segetlija Z. : Logistic processes in trade, Faculty of Economics, University of Osijek, Osijek, 2012.	3	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Teaching materials from course lectures Logistics www.logistika.com.hr Dujak Davor, lectures from the courses "Supply Chain Management" and "Logistics in Trade", Faculty of Economics, Osijek, 2020.		e-learning system 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	STATISTICS IN TRAFFIC	1.8. Course code in ISVU	214569 / 214570
1.2. Course lecturer	Ivana Beljo, grad. eng. math., univ. spec. oecc., senior lecturer	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	PhD Ana Perišić, college professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The goal is to provide students with theoretical knowledge and practical skills needed for performing statistical analysis and interpretation of the results.		
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: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.		
	LO7: Apply computer tools for analyzing and comparing data.		
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	LO9: Solve problems in the field of road transport using analytical methods.		

2.4. Expected learning outcomes on the course level	Learning outcomes according 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.	Choose appropriate descriptive statistics methods, apply them and draw conclusions about observed phenomena				5, 3
	2.	Present statistical data in tables and graphs and comment on the displays				3, 4
	3.	To calculate and interpret values for the measures of central tendency and dispersion parameters.				3, 4
	4.	To conduct correlation and regression analysis and derive conclusions on variable relationship				3, 4, 5
	5.	To solve basic problems in the field of combinatorics and probability theory				4
	6.	To select and apply probability models for different stochastic phenomena.				5, 3
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations and.	-	2 h
	2.	Descriptive statistics.	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply methods of descriptive statistics in transport problems solving.	4 h

	3.	Measures of central tendency	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems.	4 h
	4.	Positional measures of central tendency	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems.	4 h
	5.	Measures of dispersion	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems.	4 h
	6.	Correlation and regression.	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will conduct correlation and regression analysis and derive conclusions on variable relationship through colloquia or written/oral exams. Students will apply statistical methods for solving transport problems	4 h

	7.	Partial exam preparation. Introduction to combinatorics	1, 2, 5, 3	Group problem solving and discussion. Exam preparation. Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of combinatorics through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	4 h
	8.	Introduction to combinatorics	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of combinatorics through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	4 h
	9.	Permutations, Variations, Combinations	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of combinatorics through colloquia or written/oral exams.	4 h
	10.	Introduction to probability theory.	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	4 h
	11.	Introduction to probability theory. A priori probability, a posteriori probability, geometric probability	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will apply probability theory in transport problems solving.	4 h
	12.	Random variable, distributions, expectation, variance.	3, 4	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different	4 h

					stochastic phenomena. Students will apply probability theory in transport problems solving.	
	13.	Discrete random variable, binomial distribution, Poisson distribution.	3, 4	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena.	4 h
	14.	Continuous random variables. Normal distribution.	3, 4	Attending lectures. Actively involving students through problem solving and discussion.	Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena. Students will apply probability theory in transport problems solving.	4 h
	15.	Final conclusions. Exam preparation	-	Group problem solving and discussion. Exam preparation.	-	4 h

3. EVALUATION OF STUDENTS' WORK

3.1. Students' obligations	Student obligations are prescribed by the Study Regulations. It is recommended that students actively participate in classes, which includes engaging in discussions, solving tasks, etc. Students who are unable to attend classes regularly should consult with the professor during consultation hours or via email (ivana.beljo@vus.hr , ana.sisak@vus.hr). It is the responsibility of each student to stay informed about the conduct of classes. All announcements regarding the conduct or possible postponement of classes will be posted on the website of the Polytechnic of Šibenik or the course webpage, where all information about the course, as well as teaching materials and a list of literature, can also be found. Students can pass the final exam in the course in two ways: a) During the course through continuous student assessment (active participation in classes and two colloquiums). Students who do not meet some of the learning outcomes are required to take the oral part of the exam. b) During the course (active participation in classes) and by taking the exam (written and oral parts).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total	Attendance	0.5	Written exam	2 (without colloquia)	Project	
	Experimental work		Research		Practical work	

number of ECTS points corresponds to the credit score of the course)	Essay		Report		Continuous examination	0.5
	Colloquium	2,5 (without written exam)	Seminar paper		Other	
	Class activity	0.5	Oral exam	0.5(without colloquia)	Other	
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 and exercises 60 hours			60		
	2. Preparation for the Colloquium / exam through individual work			60		
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	Activities in class	Preparation for teaching units; Understanding previous content; Participation in solving tasks together 0 – 20 points				
	Seminar papers	-				
	Colloquium/written exam	Preparation/learning; Scoring and grading according to correct answers in the test. 0 – 80 points (min 40 points)				
	Oral exam	Preparation/learning; additional verification of unachieved learning outcomes				
4.4. 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
	50 – 64,9%	2 (satisfactory)	D
5. ADDITIONAL INFORMATION ABOUT THE COURSE			
5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Kovač Striko E., Fratović T., Ivanković B., Probability and statistics, Books of University of Zagreb, Zagreb 2008.	1	No
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Šošić I., Serdar V.: Introduction to statistics, School book, Zagreb, 2002.	1	
	Šošić I.: Applied statistics, School book, Zagreb, 2004.	12	
	Azcel A. Sounderpandian J.: Complete Business Statistics, McGraw Hill, 2009.	1	
	Zenzerović Z.: Statistical manual, Faculty of Maritime Studies, University of Rijeka, Rijeka, 2004.	-	
	Čižmešija M., Kurnoga Živadinović N.: A collection of solved tasks based on statistics, Mirorad d.o.o., Zagreb, 2006.	5	
	Patrick R. McMullen: Business statistics for professional studies [translated by Devčić, K., Perišić, A.], Polytechnic of Šibenik, 2017.	2	
	Teaching materials on e-learning	–	
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	THEORY OF VEHICLE MOVEMENT	1.8. Course code in ISVU	284487 / 284492
1.2. Course lecturer	Luka Olivari, master of mech., senior lecturer	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd 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	8.
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim of the course is to provide students with theoretical knowledge and practical examples to acquire the knowledge necessary to successfully solve the vehicle dynamics 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: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.		
	LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic.		
	LO7: Apply computer tools for analyzing and comparing data.		
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		

	LO9: Solve problems in the field of road transport using analytical methods.					
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.					
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs for LO)					Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Differentiate concepts in vehicle dynamics.				5
	2.	Distinguish the drive engines, concepts and elements of transmission of road vehicles.				5
	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 properties and performance of the road vehicle under different operating conditions.				5
	6.	Perform vehicle dynamics calculation for a road vehicle				6
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introductory presentation (introducing students to the content and obligations of the course). Area of study of vehicle motion theory. Exploitation of vehicle technical characteristics.	1	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h
	2.	Construction of motor vehicles. IC engines. Power transmission.	1, 2	Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. Individual preparation for colloquiums.	At the colloquium or the written and oral exam, students: differentiate concepts from statics; solve numerical problems from the specified unit.	4 h

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

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

3. EVALUATION OF 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. All students must submit seminar paper (vehicle dynamics calculation), which is also a requirement for obtaining the lecturer`s signature. Students are required to bring a calculator and other equipment necessary for solving tasks and participating in lectures and exercises. Students who achieve the following during the course: From 0 to 49.9% of ECTS credits - are graded Fail and must take and pass a written exam (test). More than 50% - students earn the right to take the final exam for the course. Students can pass the final exam for the course in two ways: a) during the course by passing two colloquiums and the oral part of the exam; b) by passing the written and oral parts of the exam.					
3.2. Student work monitoring (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	1 (without colloquiums)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous check	
	Colloquiums	1 (without written exam)	Seminar paper	0,5	Field works or Study trips	
	Teaching activities		The oral part of exam	0,5	(other)	
3.3. Student work-load	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimated)		
	1. Attending classes			60		
	2. Seminar paper			15		
	3. Colloquiums and written exam individual preparation			30		
	4. Oral exam individual preparation			15		
4. GRADING SYSTEM						
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	The task is not properly structured, it is not traceable, and it is not readable. Diagrams and sketches are non-	The task is satisfactorily structured, traceable and readable. The diagrams and		The task is clearly structured, complete, very neat and legible. The diagrams are	

	of the procedure, diagrams and sketches	existent, inaccurate, messy, unclear and ambiguous.	sketches are meaningful, neat with minor errors.	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
		50-64,9%	65-79,9%	80-89,9%
		50-64,9 points	65-79,9 points	80-89,9 points
	The oral part of exam	2	3	4
		50-64,9 points	65-79,9 points	80-89,9 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
	50 – 64,9%	2 (sufficient)	D

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
	Olivari L.: Theory of vehicle movement: a collection of tasks and instructions for drawing up a traction calculation, Polytechnic in Šibenik, Šibenik, 2023.	-	On-line (e-learning)
	Mikulić, D.: Motor vehicles: Theory of movement and construction (III edition), Polytechnic of Velika Gorica, Velika Gorica, 2020 (selected chapters)	5	On-line (e-learning)
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Lectures and exercises of the course Technical Mechanics. Perše, S., Višnjić, V.: Mechanical engineering in traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2005. (selected chapters)	-	On-line (e-learning)
	Cerovac V.: Technique and safety of road traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2001. (selected chapters)	5	-
	Vrhovski D., Nikšić M.: Basics of mechanical engineering - a collection of solved tasks, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2000. (selected chapters)	5	-
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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	ENGLISH LANGUAGE IV	1.8. Course code in ISVU	140784 / 202097
1.2. Course lecturer	PhD Ivana Kardum Goleš, college professor	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	Ivana Jardas Duvnjak, professor, title lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(15 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The aim 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF, Completed course English language III		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.		
	LO3: Independently and responsibly analyse the relevant literature necessary for decision-making.		

	Learning outcomes according 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 apply and link terms from the professional terminology of English road traffic and use them in written and oral communication.				3
	2.	to create CV (Europass template), job application, offer, complaint.				4, 6
	3.	to interpret and use tenses in real-life context.				3, 4
	4.	to present own ideas for development of traffic problems.				3
	5.	to communicate in a foreign language within the subjects of the course, to express one own opinions.				6
	6.	to compare and evaluate different traffic solutions.				5
	7.	to use part of the general language competency at levels B2.				6
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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	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	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	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	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	4 h

					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	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	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 colloquium	1, 3, 5, 6	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	10 h

					the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level.	
	9.	Professionalism In The Public Sector - Defining Relative Clauses	1, 3, 5, 6	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	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.	The History Of Railways - Connective Relative Clauses	1, 3, 5, 6	Listen to lectures and read literature. Use multimedia and internet. Solve exercises.	In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real	10 h

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

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students` attendance of at least 70% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special consideration is given to the student's evaluation during the course of the teaching process, with particular attention being paid to the student's active participation in teaching as well as his/her presentation of the written work that the student produces for homework. Of particular importance for the final evaluation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform

	oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Šibenik University and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available.					
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	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 and exercises			45		
	2. Preparation for the Colloquium / exam through self-study			45		
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	Maximum points	
		3 points	7 points	20 points	20 points	
	Seminar paper					

	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	4	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	
	50 – 64,9%		2 (sufficient)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
	Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)			10	X
5.2. . Additional literature (at the moment of changes and/or amended of study programme)	Tamara Polić: „The English Langzage I and II, English Textbook of Road and Rail Transport and Postal Services with Grammar and Exercises for 1st Year Students“, Department for Traffic, Polytechnic of Rijeka, 2007.			10	X (e-learning, handouts)
	Adrian Pilbeam, Nina O`Driscoll: "Logistics Management", Market Leader, Pearson Longman, 2010 A.J. Thomson, A. V. Martinet: "A practical English Grammar", Oxford University A.J. Thomson, A.V. Martinet: "A Practical English Grammar Exercises", Oxford University A.J. Thomson, A.V. Martinat: "A Practical English Grammar exercises II", Oxford University				

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

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TECHNOLOGY AND ORGANIZATION OF PUBLIC CITY TRANSPORT	1.8. Course code at ISVU	284496 / 284497
1.2. Course lecturer	Zvonimir Štrkalj, master of traff., lecturer	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 30 + 0)
1.4. Study program (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd 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	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is 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 CROQF.
2.3. Learning outcomes on the study program level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.

	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.	
	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.	
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.	
	LO9: Solve problems in the field of road transport using analytical methods.	
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.	
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy:	
	Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis	
	1. distinguish between technical and technological features of public transport systems.	3
	2. analyze passenger wishes and behavior models.	4
	3. distinguish between conventional and innovative passenger transport technologies.	4
	4. connect the needs and possibilities for improving the organization of public transport in cities.	4
	5. use materials and tools for searching scientific and professional literature in the native and English languages.	4
	6. present acquired knowledge, ideas, problems and solutions independently and in a team.	3

2.5. Course content according to detailed curriculum schedule	Constructive allignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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.	Technology of urban passenger transport.	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 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.	Technology of urban passenger transport.	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	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	3 h

				literature, come up with their own ideas, and ways to solve problems.	individual transport in relation to public transport. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	
	6.	Models of passenger behavior. Planning of public urban passenger transport.	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 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 possibilities of improving public transport.	3 h
	7.	Conventional modes of public transportation.	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 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
	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	In colloquium or written and oral exams they define and state the types and types of public transport vehicles and their	3 h

				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.	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.	
	10.	Urban expansion, telecommuting and transportation. Paratransit.	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 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 cities. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport.	3 h
	11.	Network of public transport lines.	1, 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 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
	12.	Planning of the public transport station.	1, 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.	At the colloquium or written and oral exam, they know how to define and describe the types of networks and ways of providing line routes, and list and analyze the factors that determine the quality of the line network. Seminar work is done in groups, discussing and proposing measures for improving public transport.	3 h

	13.	Model of pricing and charging in public city 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.	At the colloquium or written and oral exam, they can state and describe the causes and consequences of urban expansion, define and describe the forms of paratransit and its effects and influence on the public transport system in cities. Seminar work is done in groups, discussing and proposing measures for improving public transport.	3 h
	14.	Innovative transportation technologies. 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 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	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 unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% students have the right to take the final exam. Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam)).					
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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Preparation for the Colloquium / exam through self-study			60		
4. GRADING SYSTEM						
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 colloquium / 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 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	
	50 – 64,9%		2 (sufficient)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Required literature (available in the library and through other media)	Title			Number of copies in the library	Availability via other media
	Štefančić, G.: Technology of public (urban) city traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2008. (selected chapters)			3	No
5.2. Supplementary literature (at the time of the submission of	Štefančić, G.: Technology of public (urban) city traffic II, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2010.			0 0	No

changes and / or additions to the study program)	Modern traffic, Journal of Croatian scientific society for traffic, Zagreb Banister, D. : Transport and Urban Development, E & FN Spon, New York, 1995. Courses 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	INFRASTRUCTURE OF ROAD TRAFFIC	1.8. Course code in ISVU	284499 / 284500
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	Zvonimir Štrkalj, master of traff., lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 30 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2 nd , 3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO8: 8. Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.		
	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding,

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Distinguish between historical periods of road development in the world and the Republic of Croatia.				4
	2.	Analyze the division of roads according to importance and categories.				4
	3.	Construct road layout elements based on given parameters.				6
	4.	Distinguish between the lower and upper structure of a road and the associated road structures.				4
	5.	Select appropriate equipment and signage for road maintenance.				5
	6.	Identify similarities and differences between urban roads.				4
	7.	Predict the locations of accompanying traffic areas, parking lots and garages based on documentation.				5
2.5. Course content according to detailed curriculum schedule	Constructive allignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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.	-	4 h
	2.	Development of road construction (the historical development of roads in the World and the Republic of Croatia).	1	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. 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)	2	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. 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)	3	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. 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).	6 h
	5.	Road design II (elements of longitudinal sections, road cross-sections, drainage elements)	3	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. During	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	7 h

				exercises, the topic is the calculation of elements of the horizontal and vertical bend.	paper created and presented (by computer programs).	
	6.	Road structure (lower and upper part of road structure)	4	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. 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
	7.	Road equipment (traffic signs and signaling)	5	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. During exercises, the topic is Creating vertical bends.	At the colloquium or written and oral exam, students can sort the road equipment, distinguish between road equipment and traffic equipment, describe road signs, vertical, horizontal and light traffic signs. Exercise created, seminar paper created and presented (by computer programs).	7 h
	8.	Maintenance of the road (the main goals of maintenance, regular and periodic maintenance, machinery for road maintenance)	5	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.	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

	9.	Maintenance of the road (field class or study trip ŠIBENIK or DUGOPOLJE)	3, 4, 6, 7	-	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 created and presented (by computer programs).	7 h
	10.	Urban roads and streets (division by economic and traffic characteristics, elements of urban roads and streets in the transversal sense)	6	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. 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
	11.	Road intersections (basic construction criteria, traffic operations in intersections, division of road intersections, special forms of intersections)	6	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. 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, and number of traffic. Find out the difference between a road intersection and a hub. Exercise	7 h

					created, seminar paper created and presented (by computer programs).	
	12.	Road intersections (basic construction criteria, traffic operations in intersections, division of road intersections, special forms of intersections)	6	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. 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, and 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.	Service facilities on the roads (bus stops, stations, and terminals, rest stations, gas stations)	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. 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).	7 h
	14.	Parking place and garages (basic terms of stationary traffic, modes of on-street and off-street parking, division of parking garages, equipment of parking garages)	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. During exercises, the topic is elaborate on the ideal and final design.	At the colloquium or the written and oral exam, students can 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,	7 h

					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.	-	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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					

3.2. Student work monitoring (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	0,5
	Essay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	1	(other)	
	Teaching activities	1	The oral part of exam	1	(other)	

3.3. Student work-load	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Attending exercises and creating a final exercises			30		
	4. Preparation for the Colloquium / exam through self-study			90		

4. GRADING SYSTEM

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	70-75% attendance	76-86% attendance	87-100% attendance	Mental map created, Case studies resolved
		2 points	4 points	7 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
	50 – 64,9%		2 (sufficient)		D
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
	Šego D., Ljubić Hinić M.: Infrastructure od Road Traffic, Authorized script, Polytechnic of Šibenik, Šibenik, 2021.			4	e-learning
	Legac I.: Roads I, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2001. or in 2006.			2	-
	Legac I.: Intersections of public Roads - Road II, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2008. (selected chapters)			-	-
	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 Šibenik University of Applied Sciences 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 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	TRANSSHIPMENT RESOURCES	1.8. Course code at ISVU	284501 / 284502
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4.
1.6. Year of study	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The goal is to provide students with theoretical knowledge: Distinguish between types of transshipment resources; Understand the principle of continuous operation of transshipment machinery and set an example for application in business practice; Calculate the efficiency of uninterrupted handling equipment; Learn how to choose uninterrupted handling equipment based on the type of goods. Describe and distinguish between basic features and performance of transshipment mechanization with periodically action; Understand the application and purpose of transshipment mechanization with periodically action; Apply the learned content of this course in business practice.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF.
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.

	LO9: Solve problems in the field of road transport using analytical methods.	
	LO11: Choose technical and technological solutions when carrying out 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- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis
	1. differentiate goods according to the technical suitability for transport and transshipment,	4
	2. to sketch and comment on continuous operation transshipments,	3, 4
	3. calculate the productivity of individual continuous action transshipment means,	4
	4. recommend loading and unloading means depending on the type of goods and productivity,	5
	5. sketch and select the required elements of the crane,	4, 5
	6. calculate the productivity of transshipment mechanization with periodically action for specific transshipment and transport tasks,	3
	7. suggest a crane type considering the area of application.	6

2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	They listen to a lecture. They are introduced to the course content and documents on the e-learning page of the course as well as the literature available in the library.	-	1 h
		Basics of transshipment mechanization.	1	They listen to lectures and read literature. During the exercises classes they repeat the units of measurement and formulas needed to calculate the productivity of transshipment machinery.	At the colloquium or written and oral exam, they differentiate the goods according to their technical convenience for transport and transshipment. They comment on the loading angle. They distinguish between types of	4 h

					productivity of transshipment machinery with continuous operation.	
	2.	Belt conveyors. Band conveyor belts.	2, 3, 4	They listen to lectures and read literature. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can sketch and comment the belt conveyor and its constituent elements. Give an example of application. Choose the material and shapes of the bearing surfaces of the conveyor belts of the belt conveyor. They know how to calculate the productivity of belt conveyors.	6 h
	3.	Drums and rollers of belt conveyors. Devices for loading and unloading. Calculation of belt conveyors.	2, 3, 4	They listen to lectures and read literature. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can sketch and comment the belt conveyor drive with one, two and three drive drums. Sketch the types of rollers according to construction solutions and shape. They can sketch and comment the role of loading and unloading devices. They know how to calculate the required belt width for a belt conveyor. They know how to calculate the productivity of belt conveyors.	6 h
	4.	Screw conveyors. Field of application, shapes and calculation of a screw conveyor.	2, 3, 4	They listen to lectures and read literature. In the exercises classes they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can sketch and comment on a screw conveyor. Give an example of application. They can choose the shape of the screw conveyor according to the type of material. Sketch and comment on a screw conveyor for piece goods. They know how to calculate the productivity of belt conveyors.	6 h
	5.	Elevators. Forms of construction and calculation. Pneumatic conveyors. Forms of construction and calculation.	2, 3, 4	They listen to lectures and read literature. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can sketch and comment on elevators. They know how to choose types of buckets based on the type of material and elements for transporting piece goods. At the colloquium	6 h

					or written and oral exam, they can sketch and comment on pneumatic conveyors. They know how to calculate the productivity of elevators.	
	6.	Sectional conveyors. Features and calculation of sectional conveyors. Vibrating conveyors. Field of application, forms and calculation.	2, 3, 4	They listen to lectures and read literature. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they can sketch and comment on sectional conveyors. At the colloquium or written and oral exam, they can sketch and comment on vibrating conveyors. They know how to calculate the productivity of pneumatic conveyors.	6 h
	7.	Gravity conveyors. Field of application, shapes and calculation of gravity conveyors. Conveyors scrapers. Field of application, forms and calculation of scraper conveyors.	2, 3, 4	They listen to lectures and read literature. In the exercises classes, they calculate the productivity of the conveyor by analytical methods.	At the colloquium or written and oral exam, they know how to sketch and comment on gravity conveyors. Give an example of application. They know how to sketch and comment on a scraper conveyor. Give an example of application. They know how to calculate the productivity of pneumatic conveyors.	6 h
	8.	Repetition and preparation for the colloquium. Colloquium I.	1, 2, 3, 4	They listen to lectures and read literature and individually prepare for the colloquium.	-	20 h
	9.	Crane operating class. Crane elements.	5, 6	They listen to lectures and read literature. In the exercises classes, they learn about the parameters for classifying cranes into classes and calculating the productivity of transshipment machinery with periodically action. They calculate the productivity with an analytical method.	At the colloquium or written and oral exam, they sketch and comment on crane elements and identify the crane class. Calculate theoretical and operational productivity.	4 h
	10.	Ropes and steel ropes. Hooks.Chain. Grippers.	5, 6	They listen to lectures and read literature. They calculate the productivity with an analytical method.	At the colloquium or written and oral exam, they know how to sketch the types of ropes and choose the necessary rope. Sketch ways of fixing steel ropes. Sketch and comment on	4 h

					types of hooks, calculate the dangerous cross-section of the hook. Sketch and comment on types of chains and give an example from practice. They know how to sketch and comment on types of grabs and give an example from practice. Calculate parameters for classifying cranes into classes.	
	11.	Pulleys. Brakes.	5, 6	They listen to lectures and read literature. In the exercises classes they calculate the productivity with an analytical method.	At the colloquium or written and oral exam, they know how to sketch and comment on pulleys. They know how to sketch and comment on brakes and give an example from practice. Calculate parameters for classifying cranes into classes.	6 h
	12.	Division of the crane. Design of small cranes.	5, 6, 7	They listen to lectures and read literature. In the exercises classes they calculate the productivity with an analytical method.	At the colloquium or written and oral exam, they can sketch and comment on small cranes and give an example from practice. Calculate the required pressure in the cylinder of a hydraulic crane, the required force at the end of the driving lever, and the diameter of the piston.	6 h
	13.	Large cranes.	5, 6, 7	They listen to lectures and read literature. In the exercises classes they calculate the productivity with an analytical method.	At the colloquium or written and oral exam they they can sketch and comment on large cranes and give a practical example. Calculate the required number of containers.	10 h
	14.	Universal manipulative vehicles. Forklifts, loaders and small towing vehicles. Pallets and containers.	4, 6	They listen to lectures and read literature. In the exercises classes they calculate the productivity with an analytical method.	At the colloquium or written and oral exam, they they can comment on universal manipulative vehicles and give an example from practice. At the colloquium or written and oral exam, they can comment on the types of pallets and containers and give an example from practice. Calculate the control number of the container.	4 h

	15.	Repetition and preparation for the colloquium. Colloquium II. Concluding considerations. Repeating and preparing for the exam.	4, 5, 6, 7	They listen to the lecture and read the literature and individually prepare for the colloquium/ exam.	-	25 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 unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Students can pass the final exam in the course in two ways: a) during classes through continuous monitoring of students (active participation in classes and preparation and presentation of seminar paper and two colloquia); b) during classes (active participation in classes and preparation and presentation of seminar paper) and taking 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	2,5 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	2,5 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	1(without colloquia)	Other	
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:					
	Obligation			Hours (estimated)		
	1. Class attendance			60		
	2. Preparing colloquia or exams through individual work			60		

4. GRADING SYSTEM

4.1. Grading of seminar work	-				
4.2. Grading of the colloquium / 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	5 points	10 points	20 points
	Examination / Written examination	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
	Oral part of the exam	25 points	30 points	35 points	40 points
		2	3	4	5
4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences (teaching + final exam)	25 points	30 points	35 points	40 points
		Number rating		ECTS grade	
		90 – 100%		A	
		80 – 89,9%		B	
		65 – 79,9%		C	
		60 – 64,9%		D	
50 – 59,9%		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)	Mavrin I.: Conveyors, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 1999. Šćap D.: Transmissions and elevators, Faculty of Mechanical and Naval Engineering, University of Zagreb, Zagreb, 2004. (selected chapters) Bognolo, D., Kršulja, M.: Transshipment means - Collection of solved tasks, Polytechnic of Rijeka, Rijeka 2017. (selected chapters) Boris Ribarić: Examples of solved tasks in the subject of handling machinery, Faculty of transport and traffic sciences, University of Zagreb, Zagreb 1994 (selected chapters)	0 0 3 0	Available online
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Serdar J.: Transmissions and elevators, Lexicographic Institute "M. Krleža", Zagreb, 1995.	5	
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	ECONOMICS OF TRAFFIC	1.8. ISVU course code	142541 / 202087
1.2. Course lecturer	PhD Dijana Mečev, colleague professor	1.9. MOZVAG course code	
1.3. Assistants and/or associates	PhD Ivan PERONJA, associate professor	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1 st level – materials available on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2
1.6. Study year	2 nd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	This course aims to provide students with a comprehensive understanding of core economic principles and their application to transport systems, by integrating theoretical knowledge with practical insights gained through case study analysis.
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: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.
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. Compare the fundamental characteristics of transport economics and the transport market from a micro and macro perspective.					6
	2. Determine the role of transport in various segments of economic development.					6
	3. Critically evaluate the components of costs and relate them to the overall operations of transport companies.					6, 5
	4. Analyze the operations of companies in the transport sector.					5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no.	Thematic ensemble / Lecture Topic	LO of the course	Content / Teaching Method	Evaluation	Time needed
	1.	Introduction into the course and detailed plan.	-	Listen to the lecture (with encouragement of student participation and engagement)	-	1 h
		Characteristics of transport economics and transport market.	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...).	In the colloquium or written and oral exams, the student will be able to identify and describe fundamental concepts of transport economics; explain characteristics of the transport market; distinguish between the concept of transport demand and the concept of transport service; provide examples of complementarity and competition among transport sectors.	2 h
	2.	Economic sense and practical importance of transport division	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In the colloquium or written and oral exams, students will be able to list the main factors and criteria of traffic division, explain how traffic influences the division of labor and specialization. They will also be able to critically reflect on the importance of accessibility of transport services.	4 h

	3.	The role and impact of transport on economic development	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In the colloquium or written and oral exams, students will be able to explain the place and role of transport in the economic circular flow. They will be able to describe how transport impacts production and how it functionally connects production factors.	4 h
	4.	Creating revenues from transport services and the impact of prices on the demand for transport services	2, 3, 4	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In the colloquium or written and oral exams, students will be able to explain the value structure of transportation services. They will be able to analyze the relationship between price and demand for transportation, and they will be able to sketch and explain the total revenue curve.	4 h
	5.	Transport cost analysis.	2, 3, 4	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to explain the main costs in transportation. They will be able to differentiate costs based on the degree of capacity utilization and calculate the selling price of transportation services.	4 h
	6.	Transport infrastructure costs.	2, 3	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to define the characteristics of transport infrastructure. They will be able to list and explain the main revenue instruments for financing road infrastructure. Additionally, they will be able to identify and explain the main sources of revenue for road construction.	4 h
	7.	Tariffs and tariff systems.	2, 3	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...);	In colloquium or written and oral exams, students will be able to define the concept of tariffs in transportation. They will be able to list and explain the factors that influence the level and formation of tariffs.	6 h

				Presentation of seminar papers with discussion.		
	8.	Business Performance Criteria (1).	2, 3, 4	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, Students will be able to calculate and interpret net profit margin, return on assets (ROA), and return on equity (ROE).	6 h
	9.	Business Performance Criteria (2).	2, 3, 4	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to calculate and interpret productivity and efficiency.	6 h
	10.	Transport Services Market	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to define supply and demand in the market of transport services. They will be able to outline the specificities of the market for transport services.	4 h
	11.	Consumer and manufacturer behavior.	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to explain the behavior of suppliers based on the principle of profit maximization. They will also be able to explain the behavior of buyers based on the principle of utility maximization.	4 h
	12.	Market structures (1)	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...);	In colloquium or written and oral exams, students will be able to define perfect competition. They will be able to list and explain market failures. The student will define a monopoly and explain the reasons	4 h

				Presentation of seminar papers with discussion.	for its emergence. They will also be able to differentiate between monopoly and perfect competition.	
	13.	Market structures (2)	1, 2	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to define oligopoly and explain how it arises. They will be able to define monopolistic competition and differentiate it from perfect competition.	4 h
	14.	Economic policy and the market.	1	Listen to the lecture (with encouragement of student participation and engagement); Class discussions; Study of teaching materials (case studies, research articles, official publications ...); Presentation of seminar papers with discussion.	In colloquium or written and oral exams, students will be able to list and explain the most common measures through which governments regulate the transportation sector.	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: all regular students must attend at least 70% of classes. Part-time students are required to attend at least 50% of lecture classes. All students must complete, present, and pass a seminar paper. It is recommended that students actively participate in class, which includes engaging in discussions, solving problem tasks, etc. During the course, students are entitled to take two colloquiums. If students do not pass the colloquiums, they have the option to take a written exam, in which they must achieve at least 50% of the points to qualify for the oral exam. After successfully passing the colloquium or the written exam, students proceed to the oral exam. In the oral exam, students answer questions related to the outcomes that were not met. The final grade is formed based on the weighted sum of points achieved through class activities, the written exam or colloquium, and the 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	1,5 (without the colloquium)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	

	Colloquium	1,5 (without the written part of the exam)	Seminar paper	0,5		
	Class activities	0,5	Oral exam	0,5		
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			15		
	3. Preparation for the Colloquium / exam through self-study			30		
4. GRADING SYSTEM						
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		Reproduces basic terms, without difficulty transfers new knowledge, understands subject		Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately	

	apply the basic terms and concepts. Cannot apply or explain the contents of the course.	matter, explains the terms and the notions that substantiate by examples.	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 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
	Bukljaš Skočibušić M., Radačić Ž., Jurčević M. (2011): „Economics of Traffic“, Faculty of transport and traffic sciences, University of Zagreb, Zagreb. (selected chapters)	4	
	Perić T., Radačić Ž., Šimulčik D. (2000): „Economics of traffic and transport systems.“ Faculty of transport and traffic sciences, University of Zagreb, Zagreb. (selected chapters)	2	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Baričević, H. (2003): „Traffic and tourism.“ 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 web pages of the Šibenik University (Intranet). 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). In electronic communication, only messages from known addresses with full names will be responded to, written in Croatian standard and appropriate academic style.

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	SAFETY AND PROTECTION OF TRANSPORT PROCESSES	1.8. Course code at ISVU	284503 / 284504
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 30 + 0)
1.4. Study program (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of online course performance (max. 20%)	1st - course materials are online, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is to provide students with theoretical knowledge and case studies to: Define the basic concepts of safety and protection of transport processes; Understand the function of safety and protection of transport processes; Understand the technology of transport of dangerous goods in various transport branches, Apply the learned content of this course in business practice Learn and adopt the ability to adapt the characteristics of transport requirements to market requirements.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF
2.3. Learning outcomes on the study program level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.

	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.	
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.	
	LO10: Organize the transport process in the field of road transport.	
	LO12: Critically assess the organized transport process.	
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy:	
	LO level: 1- recollection, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis	
	1. differentiate the basic terms related to the safety and protection of transport processes.	4
	2. comment on the basic characteristics of hazardous substances in the transport system.	4
	3. critically assess technological procedures related to traffic safety and protection.	5
	4. choose appropriate packaging and accompanying documentation for the transport of dangerous goods.	3
	5. present the acquired knowledge independently and in a team.	6

2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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.	-	2 h
		Safety and security in traffic.	1	They listen to lectures and read literature.	At the colloquium or written and oral exam, they define the basic concepts of	2 h

					safety and protection in the traffic process and explain its goal and task.	
	2.	Legislation.	1	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they can state and explain what the regulations of protection and safety in traffic regarding traffic branches.	2 h
	3.	Ergonomic factors and anthropotechnical characteristics.	1	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	They know how to state and explain ergonomic factors and anthropotechnical features at a colloquium or written and oral exam.	4 h
	4.	Noise.	1, 3	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they know how to define the concept of noise and explain the impact of noise on humans. List and explain noise protection measures.	7 h

	5.	Traffic accidents.	1, 3, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they can state and explain the procedures in case of traffic accidents. State and explain the role of intervention services in the Republic of Croatia. Prepared and presented seminar paper (independent use of computer programs).	7 h
	6.	Traffic accidents.	1, 3, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they can state and explain the procedures in case of traffic accidents. State and explain the role of intervention services in the Republic of Croatia. Prepared and presented seminar paper (independent use of computer programs).	7 h
	7.	Hazardous substances.	1, 2, 3, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they know how to define dangerous substances and state the division of dangerous substances according to ADR. and describe their features. Prepared and presented seminar paper (independent use of computer programs).	10 h
	8.	Repetition and preparation for the colloquium. 1st Colloquium	1, 2, 3, 5	They listen to a lecture and prepare individually for the colloquium.	-	23 h

	9.	Static electricity. Measures and rules for handling and transport of dangerous goods.	1, 3, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they can explain how static electricity is generated and how to prevent it. Explain static electricity protection according to ADR. State and explain the obligations of all participants in the transport process of dangerous goods and their storage. Prepared and presented seminar paper (independent use of computer programs).	7 h
	10.	Packaging of hazardous substances.	3, 4, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they know how to define the function of packaging and state the characteristics of packaging for the packaging of hazardous substances. List and describe the packaging methods for hazardous substances. List the packing groups and explain the codes (labels) on the package. Prepared and presented seminar paper (independent use of computer programs).	4 h
	11.	Labeling of packaging and vehicles for the transport of dangerous goods.	1, 3, 4, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they know how to define and distinguish danger sheets on packaging and means of transport. Describe the danger plates. Prepared and presented seminar paper (independent use of computer programs).	8 h
	12.	Documentation.	4, 5	They listen to lectures and read literature. At the seminar classes, they individually	At the colloquium or written and oral exam, they can state and explain the	6 h

				research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	necessary documentation for the transport of dangerous goods in the branches of transport. Prepared and presented seminar paper (independent use of computer programs).	
	13.	Transport of dangerous goods in transport branches.	3, 5	They listen to lectures and read literature. At the seminar classes, they individually research the content of this thematic area by searching the database, and based on it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied.	At the colloquium or written and oral exam, they know how to explain the rules for the transport of dangerous goods in traffic. Prepared and presented seminar paper (independent use of computer programs).	12 h
	14.	Repetition and preparation for the colloquium. 2nd Colloquium.	1, 3, 4, 5	They listen to a lecture and prepare individually for the colloquium.	-	23 h
	15.	Concluding considerations. Repeating and preparing for the exam.	-	They listen to a lecture and prepare individually for the exam.	-	26 h

3. EVALUATION OF STUDENT WORK

3.1. Students` obligations	In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students' attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: From 0 - 24.9% of ECTS credits - they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Students can pass the final exam in the course in two ways: a) during classes through continuous monitoring of students (active participation in classes and the preparation and presentation of a seminar paper and two colloquia); b) during classes (active participation in classes and, preparation and presentation of seminar work) and taking 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 Colloquium)	Other	
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			60		
	2. Design of seminar work and presentation			20		
	3. Preparation for the Colloquium / exam through self-study			70		
4. GRADING SYSTEM						
4.1. . Evaluation of a 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 colloquium / written and oral exam	<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>				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.
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	76-80% of the presence	81-90% of the presence	91-100% of the presence					
		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%	81-89,9%	90-100%					
		25 points	30 points	35 points	40 points					
	Oral part of the exam	2	3	5	5					
25points		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)	Bukljaš Skočibušić M., Bukljaš Z.: Protection in traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2015.	3	No
	Aurer Jezerčić I., Žunić M.: Transport of dangerous goods by road, Institute for research and security development d.o.o., Zagreb, 2020. (selected chapters)	3	No
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Ministry of Maritime, Transport and Infrastructure: Ordinance on the handling of dangerous goods, conditions and manner of performing transport in maritime transport, loading and unloading of dangerous goods, bulk and other cargo in ports, and the manner of preventing the spread of spilled oils in ports (NN 51/05, 127/10, 34/13, 88/13, 79/15), Zagreb, 2005. Perić T., Ivaković Č.: Protection in traffic process, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 1996 Croatian Parliament: Law on Transport of Dangerous Goods, Zagreb, 2007	0	Yes No Yes
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	RESOURCES OF ROAD TRAFFIC	1.8. Course code at ISVU	284505 / 284506
1.2. Course lecturer	MSc. Ivo Jurić, senior lecturer	1.9. Course code at MOZVAG	
1.3. Assistants and/or associates	PhD. Ana-Mari Poljičak, senior lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The 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 CROQF
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.
	LO9: Solve problems in the field of road transport using analytical methods.

2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy: (maximum 2 verbs for LO)	Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1. Interpret and connect basic concepts and principles in the field of road vehicle exploitation.	3
	2. Display designs and analyze the vehicle components and assemblies.	3, 4
	3. Analyze and assess vehicle reliability.	4, 5
	4. Identify and evaluate the impact of exploitation on the lifespan of the vehicle	4, 5
	5. Evaluate and comment on the impact of the road profile and tires on driving safety	4, 5
	6. 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 needed
	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.	-	2 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 road vehicles. They know how to explain basic concepts, physical quantities and units of measure.	4 h
	2.	Changing the technical condition of the vehicle.	1, 4	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.	4 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.	4 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, 3	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.	4 h
	6.	Impact of exploitation on the life of the vehicle.	4, 6	They listen to a lecture and read literature. In the exercise classes sketch and explain the features of Otto and Diesel engines.	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 interrelationships between different factors on the reliability and life of a vehicle. Repetition of the materials and preparation for the colloquium.	4 h
	7.	Stability and safe driving.	4, 5	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.	4 h
	8.	Stability in the curve. Driving mechanics.	1, 6	They listen to a lecture and read literature. In the exercise classes, they	At the colloquium or the written and oral exam they know how to define, calculate	5 h

				sketch and explain the forces on the vehicle as they move, and solve problems in this thematic area by analytical methods.	and explain the effect of force systems on vehicles during movement and their influence on the driving mechanism.	
	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.	5 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.	5 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.	5 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 explain the various designs of clutches used on 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.	5 h

	13.	Diagnostics and diagnostic methods.	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 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).	5 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 options and present them. Repetition and preparation for the colloquium.	5 h
	15.	Braking system diagnosis. Concluding considerations. Repeating and preparing for the exam.	1, 2, 6	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.	60 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 unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and preparation of a mental map and case study, preparation and presentation of seminar work and two colloquium); b) during class (active participation in 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 corresponds to the credit score of the course)	Attendance		Written exam	3,5 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	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			60		
4. GRADING SYSTEM						
4.1. Grading of seminar work	-					
4.2. Grading of the colloquium / 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%
	Oral part of the exam	25 points		30 points	35 points	40 points
		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 ABOUT THE COURSE			
5.1. Required literature (available in the library and through other media)	Title	Number of copies in the library	Availability via other media
	Zavada J.: Means of Transport, Faculty of Transport and Traffic Sciences, University of Zagreb, Zagreb, 2000. (selected chapters)	6	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Group of Authors: The Technique of Motor Vehicles, Public open School, Zagreb, 2006.	0	
	Krpan D.: Motor Vehicles, Tehnical Book, Zagreb, 1966.	0	
	Hillier, V. A. W.: Fundamentals Motor Vehicle Tehnology, Chelenham GL53 ODN, England, 1991.	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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TECHNOLOGY AND ORGANIZATION OF ROAD TRAFFIC	1.8. Course code at ISVU	284507 / 284508
1.2. Course lecturer	Zvonimir Štrkalj, master of traff., lecturer	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study program (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is 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; 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 CROQF
LO82.3. Learning outcomes on the study program level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.

	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.	
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.	
	LO5: Apply basic legal and economic principles in an organization with socially responsible business in technical and technological entities.	
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.	
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.	
	LO9: Solve problems in the field of road transport using analytical methods.	
	LO10: Organize the transport process in the field of road transport.	
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.	
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.	
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy:	
	Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis	
	1. analyze the elements of road transport technology.	4
	2. distinguish the technical and technological characteristics of the elements of road transport technology.	4
	3. analyze the characteristics of transport requirements.	3
	4. create a transport process, using coefficients and indicators of the operation of the rolling stock	4
	5. use materials and tools for searching scientific and professional literature in the native and English languages.	5
	6. present the acquired knowledge, ideas, problems and solutions independently and in a team.	3

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

				the course content and documents on the e-learning page of the course.		
		Elements of the transport system. Substrate.	1, 2, 3, 6	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	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	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	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	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	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	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	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.	25 h

	9.	Study trip (Faculty of Traffic Sciences in Zagreb, Center for Croatian Vehicles, ZET (maintenance of buses and trams and the Center for Supervision and Organization of Traffic), Croatian Auto Club and Croatian Highways).	1, 2, 3, 4, 5, 6	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.	15 h
	10.	Driver's working hours.	1, 3, 4, 6	They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network.	In colloquium or written and oral exams they define and describe the importance of stationary define, describe and analyze the elements of recording the working hours of truck drivers. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process.	5 h
	11.	Roadways.	1, 2, 3, 5, 6	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	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,	5 h

					with discussion and proposal of measures to optimize the given transportation process.	
	13.	Road traffic information system. Logistic concept.	1, 2, 3, 4, 5, 6	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 to optimize the given transportation process.	5 h
	14.	Logistic concept. 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 describe, state and explain the role of logistics and logistics concept with the aim of establishing an optimal modern transportation process.	25 h
	15.	Concluding considerations. Repeating and preparing for the exam.	6	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 they are rated unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% students have the right to take the final exam. Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam)).					
	Attendance	1	Written exam	1 (without colloquia)	Project	1

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)	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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Preparation for the Colloquium / exam through self-study			75		

4. GRADING SYSTEM

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 colloquium / 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)		Numerical grade	ECTS grade	
	90 – 100%		5 (excellent)	A	
	80 – 89,9%		4 (very good)	B	
	65 – 79,9%		3 (good)	C	
	50 – 64,9%		2 (sufficient)	D	

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Required literature (available in the library and through other media)	Title	Number of copies in the library	Availability via other media
	Županović, I.: Technology of road transport, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters)	3	No
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Baričević, H.: Technology of land transport, Faculty of Maritime Studies, University of Rijeka, Rijeka, 2001.	3	No
	Ortuzar, J. de D., Willumsen, L.G. : Modelling Transport, John Wiley & Sons, United Kingdom, 2011. Course lectures	0	Yes
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TRAFFIC TECHNIQUES	1.8. Course code at ISVU	284509 / 284510
1.2. Course lecturer	Zvonimir Štrkalj, master of traff., lecturer	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 30 + 0)
1.4. Study program (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of online 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim is 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 CROQF.
2.3. Learning outcomes on the study program level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.

	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.				
	LO7: Apply computer tools for analyzing and comparing data.				
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.				
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.				
	LO12: Critically assess the organized transport process.				
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.				
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy:				Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis
	1. analyze the factors of road traffic safety, and their role and significance in the development of traffic.				3
	2. based on the analysis of the relationship between traffic supply and demand, and choose methods for solving the problem				4
	3. analyze an example of a traffic conflict in order to increase traffic safety.				3
	4. critically assess the causes of conflicts in traffic flows				5
	5. use materials and tools for searching scientific and professional literature in the native and English languages.				4
	6. present the acquired knowledge, ideas, problems and solutions independently and in time.				3

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

		Traffic safety factors.	1, 2	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
	2.	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
	3.	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 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
	4.	Vehicle as a factor in traffic safety.	1, 2, 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 enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system	4 h
	5.	Vehicle as a factor in traffic safety.	1, 2, 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 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	4 h

					conclude how the proper maintenance of the road affects the traffic system.	
	6.	Road as a factor in traffic safety.	1, 2, 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 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
	7.	Road traffic and Incident factor.	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 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
	8.	Road design elements. 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 define and describe the elements of road design and their role in guiding the flow.	34 h
	9.	Traffic counting and planning (fieldwork).	1, 3, 4, 5, 6	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
	10.	Parking lots and garages. Road and tunnel lighting.	1, 3, 4, 5, 6	They listen to a lecture and read literature. During the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read	In colloquium or written and oral exams they define and describe the importance of 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	4 h

				literature, come up with their own ideas, and ways to solve problems.	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.	
	11.	Adherence coefficient. Vehicle stability. Horizontal and vertical transparency.	1, 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 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
	12.	Safety clearance between vehicles in motion. Braking path. The way to react.	1, 4, 5, 6	They listen to a lecture and read literature. During the seminar, they individually explore the content of this topic area by searching the database, and based on 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 improvement. Seminar work is organized in groups, discussing, and proposing measures to calm traffic, resolve conflict situations and improve traffic	4 h
	13.	Traffic signalization.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. During the seminar, they individually explore the content of this topic area by searching the database, and based on it and the read literature,	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	4 h

				come up with their own ideas, and ways to solve problems.	proposing measures to calm traffic, resolve conflict situations and improve traffic flows.	
	14.	Traffic lighting device management. Pedestrian signals. 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 describe and specify ways to control the light signaling, define the types and cycles of light signaling for pedestrians and vehicles.	34 h
	15.	Concluding considerations. Repeating and preparing for the exam.	6	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 unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; from 25-49.9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; more than 50% students have the right to take the final exam. Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam)).					
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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Attending exercises			30		

	3. Creating and Presenting seminar paper	30
	4. Preparation for the Colloquium / exam through self-study	90

4. GRADING SYSTEM

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 colloquium / 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)		Numerical grade	ECTS grade	
	90 – 100%		5 (excellent)	A	
	80 – 89,9%		4 (very good)	B	
	65 – 79,9%		3 (good)	C	
	50 – 64,9%		2 (sufficient)	D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Required literature (available in the library and through other media)	Title			Number of copies in the library	Availability via other media
	Cerovac, V.: Traffic technique and safety, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2001. (selected chapters) Safety Act (Law) about road traffic safety Republic of Croatia.			2	Yes
				-	Available on-line
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Šego D., Ljubić Hinić M.: Infrastructure od Road Traffic, Authorized script, Polytechnic of Šibenik, Šibenik, 2021. (selected chapters)			0	Yes
	McShane, W.R. Roess, R.P., Prassas, E.S.: Traffic engineering, Prentice Hall, 1998.			1	Yes
	Modern traffic, Journal of Croatian scientific society for traffic, Zagreb.				Yes

	Courses 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	TRANSPORT GEOINFORMATION SYSTEMS	1.8. Course code in ISVU	284511 / 284512
1.2. Course lecturer	PhD Petar Feletar, associate professor	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , 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	3.	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The objective of the course is to enable students to effectively use Geographic Information Systems (GIS) in transportation by understanding the structure of spatial data, methods of their analysis, and the practical application of GIS tools to solve real-world transportation engineering problems.		
2.2. Terms of course entry and required competences	Completed four-year high school education; holding a qualification at level 4.2 according to the Croatian Qualifications Framework (HKO).		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO7: Apply computer tools for analyzing and comparing data.		
	LO8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.		
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.		
	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding,

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1. Distinguish basic terms related to transportation geoinformation systems.					4
	2. Select appropriate methods for collecting, processing, and visualizing geospatial data.					5
	3. Categorize and apply analyses (vector, raster, combined).					4
	4. Link and apply GIS tools for editing attribute data and creating SQL queries.					3
	5. Propose GIS solutions in the context of transportation networks and transport systems.					6
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	1.	Introduction to GIS: definition, importance, historical development (introduction to course content and obligations)	1	Lecture, individual work on the computer with the course content and software	-	2 h
	2.	GIS Concept, GIS Tools: overview of QGIS, ArcGIS software solutions (concept, development, system components, system classification, applications)	1	Lecture, reading literature. During the exam or written and oral test, students must define and distinguish basic terms (using GIS software).	In the quiz or written and oral exam, students will be able to define and distinguish basic terms (using GIS software programs).	4 h
	3.	Coordinate systems and map projections	1	Lecture, reading literature. In exercises, individually explore the content by searching databases and create exercises based on this information	In the quiz or written and oral exam, students will be able to define and distinguish basic terms in GIS.	4 h
	4.	Basics of GIS: interface, loading data, spatial data sources (transformations, WMS, WFS)	1, 2, 5	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to define and distinguish basic terms, use basic tools, and distinguish the functions	4 h

					of the GIS interface as well as sources of spatial data.	
	5.	Spatial data: types, structure, and characteristics (vector, raster)	1, 2, 3	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to differentiate and describe types, structures, and characteristics (vector, raster) of spatial data.	5 h
	6.	Attribute data and their processing in GIS	1, 2, 3	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to define what attribute data is, and what the appropriate processing of such data in GIS is.	4 h
	7.	SQL in the GIS environment: joining tables, SELECT, FROM, WHERE, JOIN / RELATE	1, 2, 4	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to extract specific data from the attribute table using query languages, as well as differentiate and apply the join and relate commands.	4 h
	8.	Metadata management and conversion of spatial data formats	1, 2, 5	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to propose methods for managing metadata and recommend format conversion.	4 h
	9.	Sources and location-based positioning of geospatial data: GNSS, satellite images, georeferencing, geocoding, LIDAR, and VR GIS	1, 2, 5	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to identify sources of geospatial data and explain the operation of GNSS systems, the creation of DOF (Digital Terrain Models), LIDAR systems, and VR GIS, as well as list types of applications, their advantages, and disadvantages.	5 h
	10.	Vector analysis: spatial queries, buffer, intersect, union	1, 2, 3	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to explain the	5 h

					components of vector analysis and choose the appropriate tools for analysis.	
	11.	Raster analysis: reclassify, overlay, zonal statistics	1,2,3	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral exam, students will be able to explain the components of raster analysis and select the appropriate tools for analysis.	5 h
	12.	Geocoding and dynamic segmentation of traffic routes	4, 5	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral part, students will be able to define the concepts of geocoding and dynamic segmentation, and their applications.	5 h
	13.	Network analysis: shortest path, accessibility, optimization	3, 4,5	Lecture, reading literature, exploring sources in exercises	In the quiz or written and oral part, students will be able to define the concept and objective of network analysis, differentiate and extract forms of application. They will also be able to propose and explain the shortest path algorithm.	5 h
	14.	Network analyst, new route, new service area, and application of AI tools	1, 2, 3, 4, 5	Lecture, reading literature, exploring sources in exercises	Students will be able to define and distinguish basic terms in GIS, and will be able to use software for route and service area analysis. They will be able to propose solutions for GIS problems.	5 h
	15.	Final considerations. Repeating and preparing for the exam.	-	They listen to a course lecture and prepare individuals for the exam.	-	60 h

3. EVALUATION OF STUDENT WORK

3.1. Student obligations	According to the Rules of Study and the Rules on Student Assessment and Evaluation: For all regular students, attendance in classes (lectures and exercises) is mandatory for at least 70%. For part-time students, attendance in classes (lectures and exercises) is mandatory for at least 50%. All students must complete GIS exercises, present, and pass the midterm exams, including final GIS exercises. Students who achieve: 0 – 24.9% ECTS will be graded "fail"

	and cannot earn ECTS credits, and must re-enroll in the course next academic year; 25 – 49.9% will be graded "fail" and must take the written exam (test). The written test can be held during regular or extraordinary exam periods; over 50%, students are eligible for the final exam. Students can pass the final exam in two ways: a) during the course through continuous monitoring (active participation in classes and two midterm exams); b) by taking the written and oral exams.					
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 colloquiums)	Project	
	Experimental work		Research		Practical work in exercises	1
	Esaay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper		(other)	
	Teaching activities	0,5	The oral part of exam	0,5	(other)	
3.3. Student work-load	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Exercises			30		
	3. Preparation for the Colloquium / exam through self-study			60		
4. GRADING SYSTEM						
4.1. Evaluation of Exercises	Elements of evaluation	Bad	Satisfying		Above average	
	Attendance	Below criteria	At the edge of criteria		Above criteria	
	Engagement	Below criteria	At the edge of criteria		Above criteria	
	Accuracy	Below criteria	At the edge of criteria		Above criteria	
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		It reproduces the basic concepts and without difficulty imparts new knowledge,		Knowledge is at the level of analysis, synthesis, and evaluation. It observes the	

	not know how to apply or explain the contents of the course with examples.		understands the material, explains the terms and concepts that it supports with examples.		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 new 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	Final Exercises
		2 points	4 points	7 points	3 points
	Exercises	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
	50 – 64,9%		2 (sufficient)		D
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
				-	e-learning

	Feletar P. Authorized Lectures (Merlin) – e-learning	-	e-learning
	Feletar P. Instructions for Laboratory Exercises (Merlin) – e-learning	-	PDF (Internet website)
	Hang, K.-T. Introduction to Geographic Information Systems, McGraw Hill	-	PDF (Internet website)
	Chang, K.-T. <i>Introduction to GIS</i> – PDF		PDF (Internet website)
	<i>GIS Manual for Laboratory Exercises</i> (Merlin) - PDF		
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 Sibenik University of Applied Sciences for the mentioned course. As needed by the course instructor; additional sources available on the Merlin platform and scientific databases.		e-learning system City of Sibenik library e-learning
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping records of student attendance and activity in class, and receiving information about student progress via quizzes, feedback will be provided to guide students in improving their work efficiency. Students will be informed about their rights and obligations, as well as the methods of work and necessary literature. Indicators of the quality assurance system: Student surveys, monitoring annual data from the Croatian Employment Service (HZZZ) about the employment status of students, employer surveys, and Alumni Association surveys.		
5.4. Informing about the course and contacting the course lecturer	Each student is responsible for regularly informing themselves about the course, the course schedule, and activities in class. All announcements regarding the course or possible class cancellations will be promptly posted on the course e-learning page and the VUŠ website. Students can contact instructors during consultation hours (at least one hour per week), and for brief questions and clarifications, they can approach instructors during class. It is also possible to send questions by email (from the official email address pfeletar@fpz.hr), and a response will be provided as soon as possible (no later than five working days from receiving the email).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	INFORMATION SYSTEMS IN ROAD TRAFFIC	1.8. Course code in ISVU	142540 / 202105
1.2. Course lecturer	MSc Danijel Mileta, title senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	IU1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	IU3: Independently and responsibly analyze the relevant literature necessary for decision-making.		
	IU4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	IU6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.		
	IU8: Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	IU13: Monitor trends in the development of technology, techniques, and road transport safety.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs 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 allignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 transport systems at the midterm, written and oral exam.	3 h
	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	3 h

					Internet, intranet and extranet, and give an example.	
	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, categorize, compare, judge and evaluate highway billing systems.	1 h
	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	2 h

					propose the right solution for a particular need.	
	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

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 are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).				
3.2. Student work monitoring (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 colloquiums)	Project
	Experimental work		Research		Practical work
	Esay		Report		Continuous check
	Colloquiums	1 (without written part of exam)	Seminar paper	0,5	(other)
	Teaching activities		The oral part of exam	0,5	(other)
3.3. Student work-load	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		60		
	2. Creating and Presenting seminar paper		16		
	3. Preparation for the Colloquium / exam through self-study		44		

4. GRADING SYSTEM

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

		The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.	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 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	
	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
	50 – 64,9%	2 (sufficient)	D
5. ADDITIONAL INFORMATION ABOUT THE COURSE			
5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Bošnjak I.: Intelligent transport systems, Faculty of transport and traffic sciences, University of Zagreb, (selected chapters)	3	
	Mileta D.: Electronic business (selected chapters)		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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	TRANSPORT GEOGRAPHY	1.8. Course code in ISVU	201141 / 202111
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Optional	1.12. Number of course revisions	4
1.6. Year of study	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.		
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.		
	LO11: Choose technical and technological solutions when carrying out traffic and/or goods flows.		
2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis,

						5- evaluation, 6- synthesis.
	1. Present the development of transport branches throughout history.					6
	2. Distinguish the main factors that determine the emergence of global trade flows.					4
	3. Evaluate the development of trade in food, natural raw materials and industrial products.					5
	4. Identify the most important transport corridors in Europe, North America and Asia in all transport branches.					4
	5. Present the activities of the EU Marco Polo programme.					4
	6. Critically assess the provisions of the latest EU White Paper on Transport.					5
2.5. Course content according to detailed curriculum schedule	Constructive allignement					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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	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.	At the colloquium or written and oral exam students can present, comment and evaluate the historical development of road, rail and pipelines. Seminar paper created and presented (by computer programs).	3 h
	3.	Development of transport branches throughout history (water, air, postal and telecommunication)	1	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 written and oral exam students can present, comment and evaluate the historical development of water, air and postal and telecommunications traffic.	3 h

				knowledge and presents their own ideas, and ways to solve problems.	Seminar paper created and presented (by computer programs).	
	4.	Development of transport branches throughout history (video films)	1	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.	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)	2	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.	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	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.	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	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.	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, 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).	3 h
	8.	Geographical location of North American transport corridors	4	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.	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	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.	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 created and presented (by computer programs).	3 h

	10.	Spatial distribution of food flows (meat, fruits and vegetables, cereals)	3	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.	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)	3	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.	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)	3	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.	At the colloquium or the written and oral exam, students know how to define the concept of 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	4 h

					created and presented (by computer programs).	
	13.	Marco Polo Program (program objective, program activities, program projects)	5	They listen to a course lecture and read literature. They use multimedia and network. At the seminar lectures, they individually explore the content of this topic area by searching the database, and based on it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.	At the colloquium or the written and oral exam, students can define the 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	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.	At the colloquium or written and oral exam, 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
	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 unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					
3.2. Student work monitoring (enter the share of ECTS credits for each activity so that the total	Attending classes	0,5	Written exam	1 (without colloquiums)	Project	
	Experimental work		Research		Practical work	

number of ECTS credits corresponds to the course credit value)	Esey		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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			15		
	3. Preparation for the Colloquium / exam through self-study			45		

4. GRADING SYSTEM

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	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	
	50 – 64,9%		2 (sufficient)		D	
5. ADDITIONAL INFORMATION ABOUT THE COURSE						

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Šego Darijo: Traffic corridors and merchandise flows, Script for internal use, Polytechnic of Šibenik, Šibenik 2016. World trade organization http://www.wto.org/ (selected chapters) Transport in EU http://ec.europa.eu/transport/index_en.htm (selected chapters)	- -	e-learning system
			Internet website 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 Šibenik University of Applied Sciences 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	TRAFFIC IN TOURISM	1.8. Course code at ISVU	201142 / 202110
1.2. Course lecturer	PhD Ana-Mari Poljičak, senior lecturer	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 0 + 15 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1st, course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Optional	1.12. Number of course revisions	4.
1.6. Year of study	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	3	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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 CROQF.
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.
	LO2: Critically assess the opinions and attitudes of stakeholders in teamwork.
	LO3: Independently and responsibly analyze the relevant literature necessary for decision-making.
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.

2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy: (maximum 2 verbs for LO)	Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1. distinguish the basic terms in traffic and tourism.	4
	2. comment on the branches of traffic in tourism.	4
	3. choose the form of tourist transport as part of a tourism product.	5
	4. use materials and tools to search scientific and professional literature in their native and English languages.	3
	5. present the acquired knowledge, ideas and solutions independently and in a team.	6

2.5. Course content according to detailed curriculum schedule	Constructive allignement					
	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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 cite and explain the elements of production of transport products.	1 h
	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	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	5 h

				that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	tourism and tourism on transport. Define transport service and tourism product. Explain the transport service as a tourism product and give an example of the absence of a transport service in a tourism product. List and explain the categories of users of tourist trips and motives for traveling. Define and explain tourism as a system.	
	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.	4 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 database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can define trips and multi-day bus trips. Explain panoramic and shuttle transportation. Give an example of local tourist lines. Define the rental of road vehicles in a tourist destination. List ways to use your bike while on vacation. 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.	4 h

					Seminar paper created and presented (using computer programs independently).	
	5.	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).	3 h
	6.	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).	8 h
	7.	Air traffic as part of the tourist product, charter travel.	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 written and oral exam, they can explain the history of air transport and define tourist services based on air transport. Comment on the role of air transport in tourism in the Republic of Croatia. Establish the difference between scheduled and charter air transport. Seminar paper created and presented (using computer programs independently).	4 h
	8.	The repetition and preparation for the colloquium. Colloquium I.	1, 2, 3, 4, 5	They listen to a lecture and read literature. They prepare individually for the colloquium.	-	12 h

	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 teaching, the brainstorming method and the discussion method on the topic are applied.	At the colloquium or the written and oral exam they can explain regular and charter air traffic. Explain the features of low-cost companies. Give examples of low cost airlines. Explain pick-up and departure technology for airport passengers. Give an example of air traffic services to tourists with special requirements.	3 h
	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).	3 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).	4 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 literature read, create a seminar paper that presents the acquired knowledge. In 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 branches. At the colloquium or the written	5 h

				group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied.	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).	
	13.	Parking in tourist destinations.	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. Seminar paper created and presented (using computer programs independently).	3 h
	14.	The repetition and preparation for the colloquium. Colloquium II.	1, 2, 3, 4, 5	They listen to a lecture and read literature. They prepare individually for the colloquium.	-	12 h
	15.	Concluding considerations. Repeating and preparing for the exam.	-	They listen to a lecture and prepare individually for the exam.	-	17 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 unsuccessful and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and preparation of a mental map and case study, preparation and presentation of seminar work and two colloquium); b) during class (active participation in class and preparation of a mental map and case study, preparation and presentation of seminar work) and passing exams (written and oral part of the exam).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total	Attendance		Written exam	1,5 (without colloquia)	Project	
	Experimental work		Research		Practical work	

number of ECTS points corresponds to the credit score of the course)	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	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	<i>Obligation</i>			<i>Hours (estimated)</i>		
	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 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 colloquium / 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						

5.1. Required literature (available in the library and through other media)	Title	Number of copies in the library	Availability via other media
	Mrnjavac E.: Traffic in tourism, Faculty of tourism and hotel management, University of Rijeka, Opatija, 2006. (selected chapters) Maršanić R.: Parking in tourist destination, IQPLUS d.o.o., Rijeka, 2008.	5 5	
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	Baričević H.: Traffic in tourism, Collegue of tourism, Šibenik, 2003. Lumsdon L. M., Page S. J.: Tourism and Transport, Issues and Agenda for the New Millennium, Routledge, 2003.	11 0	Available online
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

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

1. GENERAL INFORMATION ABOUT THE COURSE			
1.1. Course title	INFRASTRUCTURE OF ROAD TRAFFIC	1.8. Course code in ISVU	284499 / 284500
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	Zvonimir Štrkalj, master of traff., lecturer	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(30 + 30 + 30 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	4
1.6. Year of study	2 nd , 3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ 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	Four-year secondary education completed; qualification level 4.2 according to the CROQF.		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO8: 8. Propose an optimal solution in the field of road transport using relevant literature and computer programs.		
	LO13: Monitor trends in the development of technology, techniques, and road transport safety.		
	Learning outcomes by Bloom: (maximum 2 verbs for LO)		Level of LO: 1- memory, 2- understanding,

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)						3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Distinguish between historical periods of road development in the world and the Republic of Croatia.				4
	2.	Analyze the division of roads according to importance and categories.				4
	3.	Construct road layout elements based on given parameters.				6
	4.	Distinguish between the lower and upper structure of a road and the associated road structures.				4
	5.	Select appropriate equipment and signage for road maintenance.				5
	6.	Identify similarities and differences between urban roads.				4
	7.	Predict the locations of accompanying traffic areas, parking lots and garages based on documentation.				5
2.5. Course content according to detailed curriculum schedule	Constructive allignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time needed
	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.	-	4 h
	2.	Development of road construction (the historical development of roads in the World and the Republic of Croatia).	1	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. 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)	2	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. 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)	3	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. 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).	6 h
	5.	Road design II (elements of longitudinal sections, road cross-sections, drainage elements)	3	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. During	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	7 h

				exercises, the topic is the calculation of elements of the horizontal and vertical bend.	paper created and presented (by computer programs).	
	6.	Road structure (lower and upper part of road structure)	4	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. 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
	7.	Road equipment (traffic signs and signaling)	5	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. During exercises, the topic is Creating vertical bends.	At the colloquium or written and oral exam, students can sort the road equipment, distinguish between road equipment and traffic equipment, describe road signs, vertical, horizontal and light traffic signs. Exercise created, seminar paper created and presented (by computer programs).	7 h
	8.	Maintenance of the road (the main goals of maintenance, regular and periodic maintenance, machinery for road maintenance)	5	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.	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

	9.	Maintenance of the road (field class or study trip ŠIBENIK or DUGOPOLJE)	3, 4, 6, 7	-	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 created and presented (by computer programs).	7 h
	10.	Urban roads and streets (division by economic and traffic characteristics, elements of urban roads and streets in the transversal sense)	6	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. 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
	11.	Road intersections (basic construction criteria, traffic operations in intersections, division of road intersections, special forms of intersections)	6	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. 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, and number of traffic. Find out the difference between a road intersection and a hub. Exercise	7 h

					created, seminar paper created and presented (by computer programs).	
	12.	Road intersections (basic construction criteria, traffic operations in intersections, division of road intersections, special forms of intersections)	6	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. 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, and 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.	Service facilities on the roads (bus stops, stations, and terminals, rest stations, gas stations)	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. 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).	7 h
	14.	Parking place and garages (basic terms of stationary traffic, modes of on-street and off-street parking, division of parking garages, equipment of parking garages)	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. During exercises, the topic is elaborate on the ideal and final design.	At the colloquium or the written and oral exam, students can 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,	7 h

					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.	-	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 papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits are rated unsuccessful and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% are assessed by insufficient and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the exam (written and oral part of the exam).					

3.2. Student work monitoring (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	0,5
	Essay		Report		Continuous check	
	Colloquiums	1 (without written part of exam)	Seminar paper	1	(other)	
	Teaching activities	1	The oral part of exam	1	(other)	

3.3. Student work-load	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		
	1. Attending classes			30		
	2. Creating and Presenting seminar paper			30		
	3. Attending exercises and creating a final exercises			30		
	4. Preparation for the Colloquium / exam through self-study			90		

4. GRADING SYSTEM

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	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
	50 – 64,9%		2 (sufficient)		D
5. ADDITIONAL INFORMATION ABOUT THE COURSE					
5.1. Compulsory literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media
	Šego D., Ljubić Hinić M.: Infrastructure od Road Traffic, Authorized script, Polytechnic of Šibenik, Šibenik, 2021.			4	e-learning
	Legac I.: Roads I, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2001. or in 2006.			2	-
	Legac I.: Intersections of public Roads - Road II, Faculty of Transportation and Traffic Sciences, University of Zagreb, Zagreb 2008. (selected chapters)			-	-
	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 Šibenik University of Applied Sciences 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 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	PROFESSIONAL PRACTICE	1.8. Course code in ISVU	214573 / 214574
1.2. Course lecturer	Darijo Šego, univ. spec. traff., senior lecturer	1.9. Course code in MOZVAG	-
1.3. Assistants and/or associates	-	Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	0 + 0 + 0 + 0
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st , 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit score (ECTS)	15	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐
2. COURSE DESCRIPTION			
2.1. Course objectives	The basic goal of the course is to acquaint students with the practical work of legal entities that perform transport activities. The aim is to train students to understand the structure of jobs, the way they function and work. Thanks to the previously acquired theoretical knowledge, students are trained to work in the transport industry, as a professional bachelor of road transport.		
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF, Enrolled VI. semester		
2.3. Learning outcomes on the study programme level	LO1: Connect professional terms from the field of road transport in written and oral communication with the professional public in Croatian and English.		
	LO4: Apply knowledge from the field of natural and technical sciences to problems in the field of road transport.		
	LO6: Based on the previous analysis, present relevant facts from the field of road transport necessary for drawing conclusions.		
	LO10: Organize the transport process in the field of road transport.		
	LO12: Critically assess the organized transport process.		

2.4. Expected learning outcomes on the course level (4-10 learning outcomes)	Learning outcomes by Bloom: (maximum 2 verbs for LO)					Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1.	Connect the theoretical knowledge acquired from the course with practical knowledge from a legal entity engaged in the transport industry.				6
	2.	Distinguish between the activities of a legal entity engaged in transport activities.				4
	3.	Analyze and critically assess the organized transportation processes of a legal entity engaged in transportation activities.				4, 5
	4.	Present the legal entity and acquired knowledge from a legal entity engaged in transport activities.				6
	5.	Choose the optimal solution for improving the business processes of a legal entity engaged in the transport industry.				5
2.5. Course content according to detailed curriculum schedule	Constructive alignment					
	No	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
	1.	Execution of the Professional practice	1, 2, 3, 4, 5, 6	Students are introduced to the buildings, premises, general information, and business processes of a company engaged in transportation activities. They perform work tasks related to the organization of the transportation process, vehicle fleet, vehicle and road maintenance, warehousing, shipping and forwarding, and other professional tasks assigned to them in the company.	Professional Practice Diary prepared and presented.	450 h
3. EVALUATION OF STUDENT WORK						
3.1. Student obligations	Obligations of students of the Šibenik University of Applied Sciences in performing professional practice as well as the conditions and manner of conducting the professional practice in professional studies of the Šibenik University are prescribed by the Ordinance on professional practice. At this					

	point, the same is described in summary form. Students are required to complete a professional practice. The student performs professional practice in a legal entity that performs transport activities, which is determined by the holder of the course professional practice independently or at the proposal of the student. In order for a student to be admitted to a professional internship, the course leader signs the Instruction for performing the professional internship (Appendix 2 of the Ordinance on professional practice). Professional practice is performed under the mentorship of an authorized person. During the internship, the student is obliged to conscientiously and honestly perform the tasks entrusted to him and is obliged to respect the legal regulations of the legal entity in which he performs the internship, adhere to the prescribed measures of safety at work, work obligations, and safety measures. legal entity in which he performs professional practice and takes care that his behavior or actions do not harm the legal entity and the Šibenik University. During the internship, the student prepares a Diary of internship (Appendix 4 of the Ordinance on professional practice). Upon completion of the internship, the mentor signs it. After successfully completing the practice, the authorized person in the legal entity in which the student is doing the internship signs and certifies the student the Certificate of completed internship (Annex 5 of the Ordinance on professional practice) in his part of the certificate. The student is obliged to submit the diary of professional practice and the Certificate of completed professional practice to the holder of the course Professional practice immediately after the completion of professional practice, and no later than the end of the current academic year. If the holder of the Professional Practice course accepts the Professional Practice Diary, he/she enters "satisfied" in the Certificate of Professional Practice and the index. If the holder of the Professional Practice course does not accept the Professional Practice Diary, he enters "not satisfied" in the Certificate of Professional Practice, and the student is obliged to re-enroll in the Professional Practice course in the next academic year. Professional practice is terminated in the event of justified reasons and continues when such reasons cease to exist. The student or mentor informs about the existence or termination of the existence of the same lecturers immediately after their occurrence or after learning about the existence of such reasons. A student may be recognized for the Professional Practice course if he/she works or has worked on jobs that correspond to the intended practice in terms of content and complexity. In order for the course to be recognized, the student should, in the semester in which he is obliged to do the internship, submit a written application for recognition of the internship (Appendix 3 of the Ordinance on professional practice) and a certificate of the legal entity where he works or has worked. The certificate must contain the title of the job, a detailed description of the job, and the start date as well as the end date in case the employment is terminated. The holder of the course decides on the recognition of professional practice.					
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		Execution of professional practice	12
	Teaching activities		The oral part of exam		Professional practice diary	3
3.3. Student work-load	The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:					
	Obligation			Hours (estimate)		

	1. Attending a Professional Practice	360
	2. Writing a diary of Professional Practice	90

4. GRADING SYSTEM

4.1. Forming the final grade according to the evaluation elements	No grading. Professional practice is evaluated descriptively ("satisfied" or "not satisfied"). The same is explained under point 3.1.

5. ADDITIONAL INFORMATION ABOUT THE COURSE

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	The literature of the Professional undergraduate study of Traffic. Materials obtained from the legal entity where they performed the Professional Practice.		
5.2. Additional literature (at the moment of changes and/or amended of study programme)	The literature of the Professional undergraduate study of Traffic. Professional Internet websites, and materials in the domestic and foreign language from the field of transport activity where the 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 Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address 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 ABOUT THE COURSE			
1.1. Course title	BACHELOR THESIS	1.8. Course code at ISVU	214575 / 214576
1.2. Course lecturer	-	1.9. Course code at MOZVAG	-
1.3. Assistants and/or associates	-	1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning)	(0 + 0 + 0 + 0)
1.4. Study programme (professional undergraduate, and professional graduate)	Professional undergraduate study of Traffic	1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), percentage of on line course performance (max. 20%)	1 st - 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	3 rd	1.13. Modernization	☒ yes ☐ no
1.7. Credit point (ECTS)	10	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ☒ More than 20 % ☐

2. COURSE DESCRIPTION	
2.1. Course objectives	The aim of the course is that the student within the given topic successfully applies the acquired knowledge in solving tasks related to the profession, thus deepening the theoretical knowledge acquired through the study program at the level of the profession he acquires. Also, the aim of the course is for students to develop the ability of an independent approach in processing and solving complex and practical problems in the profession. Students develop the ability to independently analyze research results as well as the skills of writing and presenting independent work.
2.2. Terms of course entry and required competences	Four-year secondary education completed; qualification level 4.2 according to the CROQF, Enrolled VI semester
2.3. Learning outcomes on the study programme level	Learning outcomes of the Bachelor thesis depends on the topic and the course is chosen by the student.
2.4. Expected learning outcomes on the course level	Learning outcomes according to Bloom's taxonomy: (maximum 2 verbs for LO) Level of LO: 1- memory, 2- understanding,

		3- application, 4- analysis, 5- evaluation, 6- synthesis.
	1. Choose a topic and analyze the problem.	4
	2. Analyze and sublimate relevant data from the literature and other data sources.	3
	3. Formulate and analyze the context of the research.	6, 4
	4. Select and apply the research methodology and write the Bachelor thesis.	5
	5. Evaluate and present the results of the research or solution to the problem.	6

2.5. Course content according to detailed curriculum schedule						
3. EVALUATION OF STUDENT WORK						
3.1. Students` obligations	Students are required to write a Batchelor Thesis under the guidance of a selected or assigned mentor. Consult with the mentor about the given topic and the Batchelor thesis. The student is obliged to present and defend the Batchelor Thesis in front of the Committee for evaluation and defense of the Batchelor Thesis.					
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	4 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium		Seminar paper		The written part of the Batchelor thesis	7
	Class activity		Oral exam		Oral defense of the Batchelor thesis	3
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:					
	Obligation			Hours (estimated)		
	1. The written part of the Batchelor thesis			210		
	2. Oral defense of the Batchelor thesis			90		

4. GRADING SYSTEM

4.1. Evaluation of the Batchelor thesis	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.	
4.3. Forming the final grade according to the evaluation elements	The written part of the Batchelor thesis	2	3		4		5
		5 points	10 points		15 points		20 points
	The written part of the Batchelor thesis	2	3		5		5
		5 points	10 points		15 points		15 points
4.4. Formation of final grade based on absolute distribution	Percentage of acquired knowledge, skills and competences			Numerical grade		ECTS grade	
	90 – 100%			5 (excellent)		A	
	80 – 89,9%			4 (very good)		B	
	65 – 79,9%			3 (good)		C	

	50 – 64,9%	2 (sufficient)	D
5. ADDITIONAL INFORMATION ABOUT THE COURSE			
	Title	Number of copies in the library	Availability via other media
5.1. Required literature (available in the library and through other media)	Rulebook on the Batchelor thesis. Instructions for writing a seminar paper and Batchelor thesis. Books and professional literature in the field of writing the Batchelor thesis. Internet websites in the field of the topic of writing the Batchelor thesis.	-	-
5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program)	-	-	-
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Šibenik University. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).		

10. MATRIX OF LEARNING OUTCOMES

LEARNING OUTCOMES (LO)	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10	LO11	LO12	LO13
COURSE NAME													
Mathematics I				+		+		+	+				
Technical mechanics I	+			+					+				
English language I	+	+	+										
Graphic communications				+			+	+					
Modern traffic systems	+		+	+		+							+
Knowledge of goods	+	+	+			+							+
Traffic law	+	+	+		+	+							+
Mathematics II				+		+		+	+				
Technical mechanics II	+			+					+				
English language II	+	+	+										
Informatics			+	+			+	+					
Traffic and ecology	+		+	+		+					+		+
Traffic logistics	+							+		+	+		+
Basics of electrical engineering and electronics				+					+				
Operational research in traffic				+			+	+	+				
Basics of mechanical engineering	+			+					+				
English language III	+	+	+										
Urban mobility	+	+	+		+	+					+	+	+
Traffic corridors and merchandise flows	+	+	+			+					+		
Internal transport and storage	+								+	+	+		
Logistics and supply chains	+				+			+		+		+	
Statistics in traffic				+		+	+	+	+				
Theory of vehicle movement	+	+		+			+	+	+				+
English language IV	+	+	+										
Technology and organization of public city transport	+	+	+		+	+			+		+		+

Infrastructures of road traffic	+			+				+					+
Transshipment resources	+			+		+			+		+		
Economics of traffic		+	+		+								
Safety and protection of transport processes	+		+		+	+				+		+	+
Resources of road traffic	+			+					+				
Technology and organization of road traffic	+	+	+	+	+	+		+	+	+	+	+	+
Traffic techniques	+	+	+	+		+	+	+			+	+	+
Traffic geoinformation systems	+						+	+			+		+
Information systems in road traffic	+		+	+		+		+					+
Transport geography	+		+			+					+		
Traffic in tourism	+	+	+			+							
Infrastructures of road traffic	+			+				+					+
Professional practice	+			+		+				+		+	
Batchelors thesis													
TOTAL NUMBER OF COURSES BY LEARNING OUTCOMES	30	14	19	21	7	18	7	15	14	6	11	6	16

Curriculum for the Department of Traffic Studies, Professional Undergraduate Study of Traffic Šibenik University of Applied Sciences, for the academic year 2025./2026. was adopted at the 03th session of the Council Department of Traffic Studies, which was held on Thursday, July 09. 2025.

Curriculum for the Department of Traffic Studies, Professional Undergraduate Study of Traffic Šibenik University of Applied Sciences, for the academic year 2025./2026. was adopted at the 24th session of the Council Šibenik University of Applied Sciences, which was held on Monday, July 07. 2025.

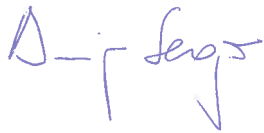
CLASS: 007-02/25-09/01

REGISTRY NUMBER: 103-09-25-14

Šibenik, 08.07.2025.

Head of Department of Traffic Studies

Darijo Šego, univ. spec. traff., senior lecturer



Dean of Šibenik University of Applied Sciences
PhD Ljubo Runjić, colleague professor

