POLYTECHNIC OF ŠIBENIK Undergraduate professional study of Traffic

Trg Andrije Hebranga 11, 22000 Šibenik Republic of Croatia



Šibenik, September 2021.

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THE CURRICULUM OF THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

DIRECTIONS: ROAD TRAFFIC, POSTAL TRAFFIC

Academic year 2021./2022.

Dean of Polytechnic of Šibenik

phD. Ljubo Runjić, collegue professor

Head of Undergraduate professional study of Traffic Darijo Šego, univ. spec. traff., senior lecturer

Šibenik, September 2021.

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

Enrollment in the academic year

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

Enrollment in the senior academic year

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

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

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

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

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

The repetition of the academic year

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

Completion of studies

The undergraduate professional study ends with the passing of all exams of enrolled subjects, the fulfillment of other obligations, and the preparation and defense of the Batchelor Thesis. Before submitting the Batchelor Thesis for assessment and defense, the student must pass all courses and achieve a minimum of 170 ECTS credits.

1. REQUIREMENTS AND RESULTS OF THE STUDY PROGRAM

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

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

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

The Undergraduate professional study of Traffic consists of six semesters.

2. EXPECTED LEARNING OUTCOMES AT THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC

Learning outcomes (LO) at the Undergraduate professional study of Traffic Polytechnic of Šibenik in the academic year 2021./2022. are:

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

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

| NAME AND SURNAME OF THE LECTURER | COURSE NAME | CONTACT E-MAIL | CONSULTATION |
|--|---|----------------------|--------------|
| Employees of the Polytechnic of Šibenik w | ho teach | | |
| Jerko ACALIN, grad. eng. inf., lecturer. | Basics of computer science | jerko@vus.hr | Cabinet 7 |
| Darijo ŠEGO, univ. spec. traff., senior lecturer. | Information systems in postal traffic Logistic and supply chains Postal and money circulation Postal technology and organization Professional practice Infrastructures of road traffic Traffic corridors and merchandise flows Traffic logistics Transport geography | <u>darijo@vus.hr</u> | Cabinet 21 |
| Ana-Mari POLJIČAK, grad. eng. traff., senior lecturer. | Freight-Distributional centres and terminals Infrastructure of postal-telecomunications traffic Internal transport and storage Modern traffic systems Planning of postal network Resources and exploitation of resources of road traffic Safety and protection of transport processes Technical means of postal-telecomunications traffic Traffic in tourism Transshipment resources | jankovic@vus.hr | Cabinet 21 |

| MSc. Martina LJUBIĆ HINIĆ, senior lecturer. | Modern traffic systems Technology and organization of public city transport Technology and organization of road traffic Traffic in tourism Traffic techniques Safety and protection of transport processes | ljubicvus@gmail.com | Cabinet 21 |
|--|---|------------------------|------------|
| Nikolina GAĆINA, mag. eng., senior lecturer. | Knowledge of goods | <u>nikolina@vus.hr</u> | Cabinet 2 |
| MSc. Ivana KARDUM GOLEŠ, senior lecturer. | English language I English language II English language III English language IV | <u>ivanakg@vus.hr</u> | Cabinet 22 |
| Ivana BELJO, grad. eng. math., univ. spec. oecc., senior lecturer. | Mathematics Operational research in traffic | ibeljo@vus.hr | Cabinet 24 |
| Želimir MIKULIĆ, grad. eng., senior lecturer. | Operational research in traffic | zmikulic@vus.hr | Cabinet 19 |
| Ana PERIŠIĆ, grad. eng. math., univ. spec. oec., senior lecturer. | Statistics in traffic | <u>sisak@vus.hr</u> | Cabinet 24 |
| MSc. Tanja RADIĆ LAKOŠ, senior lecturer. | Traffic and ecology | <u>tanja@vus.hr</u> | Cabinet 11 |
| phD. Dijana MEČEV, college professor. | Economics of traffic Logistic and supply chains | <u>dijana@vus.hr</u> | Cabinet 3 |
| Luka OLIVARI, mag. eng. mech., lecturer. | Graphic communications Basics of mechanical engineering Physics Resources and exploitation of resources of road traffic Technical mechanics Theory of vehicle movement | <u>lolivari@vus.hr</u> | Cabinet 18 |

| Associates of the Polytechnic of Šibenik wi | ho teach | | |
|--|---|--------------------------|---------------------------------------|
| MSc. Krešimir NIMAC, lecturer. | Traffic law | kresonimac@gmail.com | According to the schedule of lectures |
| phD. Ernest BAZIJANAC, regular collegue professor. | Resources and exploitation of resources of road traffic Theory of vehicle movement | <u>ebazijanac@fpz.hr</u> | According to the schedule of lectures |
| phD. Ivan MAVRIN, regular collegue professor | Resources and exploitation of resources of road traffic | ivanmavrin13@gmail.com | According to the schedule of lectures |
| MSc. Danijel MILETA, senior lecturer. | Basics of electrical engineering and electronics Information systems in road traffic | danijel.mileta@gmail.com | Cabinet 2 |
| MSc. Josip PAIĆ, senior lecturer. | Physics | josip.paic1@gmail.com | Cabinet 21 |
| MSc. Srećko ĐURANOVIĆ, senior lecturer. | Basics of mechanical engineering Tehnical mechanics | sduranovic@fpz.hr | According to the schedule of lectures |
| Luca OLIVARI, mag. math., assistant. | Mathematics Operational research in traffic | lolivari25@outlook.com | According to the schedule of lectures |

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

Teaching process at the Undergraduate professional study of Traffic is performed at the Polytechnic of Šibenik, in 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 Polytechnic of Šibenik 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 of the Polytechnic. In accordance with the requirements of the *Regulation on the content of license and conditions for issuing license to perform activities of higher education, carrying out study programs and re-accreditation of higher education institutions* (Public papers No. 24/10) Article 5 (2), the Polytechnic meets the ratio of the number of students enrolled and the space available for teaching.

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

| C | OURSES | LECTURER | | COURSE SCHEDLUE | | ER COURSE SCHEDLUE | | | |
|--------------------------------------|---|-------------------------------|-----------------|-----------------|-------------|---------------------|-------------|---------------------|---------|
| | | | Seminars/ | L Hours | S Hours | Number of groups | E Hours | Number of groups | ECTS |
| Head of course | Name | Lecturer | Exercises | per week | per week | orgroups | per week | of groups | credits |
| I. semester | • | | • | | | | | • | |
| Beljo Ivana | Mathematics | Beljo I. | Olivari Luca | 3 | - | - | 3 | 1 | 8 |
| Paić Josip | Physics | Paić J. | Olivari Luka | 2 | - | - | 2 | 1 | 5 |
| Olivari Luka | Graphic communications | Olivari L. | Olivari Luka | 2 | - | - | 2 | 1 | 5 |
| Acalin Jerko | Basics of computer science | Acalin J. | Acalin J. | 1 | - | - | 3 | 1 | 5 |
| Gaćina Nikolina | Knowledge of goods | Gaćina N. | Gaćina N. | 2 | 1 | 1 | - | - | 4 |
| Kardum Goleš Ivana | English language I | Kardum Goleš I. | Kardum Goleš I. | 2 | - | - | 1 | 1 | 3 |
| II. semester Ljubić Hinić Martina | Modern traffic systems | Ljubić Hinić M./ | Ljubić Hinić M. | 3 | 1 | 1 | - | - | 6 |
| Mileta Danijel | Basics of electrical engineering and electronics | Poljičak A-M Mileta D. | Mileta D. | 2 | - | - | 2 | 1 | 5 |
| Šego Darijo | Traffic logistics | Šego D. | Šego D. | 2 | 2 | 1 | - | - | 4 |
| Kardum Goleš Ivana | English language II | Kardum Goleš I. | Kardum Goleš I. | 2 | - | - | 1 | 1 | 3 |
| Olivari Luka | Technical mechanics | Olivari Luka/ Đuranović S. | Olivari Luka | 3 | - | - | 3 | 1 | 8 |
| | Traffic and ecology | Radić Lakoš T. | Radić Lakoš T. | 2 | 1 | 1 | _ | | 4 |

| | Undergraduate professional study of Traffic (direction: Road traffic) – II. Study year | | | | | | | | |
|---------------------------|--|-------------------------------|------------------------|---------------------------|---------------------------|---------------------|---------------------------|---------------------|-----------------|
| С | OURSES | LECTU | J RER | COURSE SCHEDLUE | | | | | |
| Head of course | Name | Lecturer | Seminars/ Exercises | L Hours per week | S Hours per week | Number of groups | E Hours per week | Number of groups | ECTS Credits |
| III. semester | | | | • | | | | | |
| Olivari Luka | Basics of mechanical engineering | Olivari Luka/ Đuranović S. | Olivari Luka | 3 | - | - | 3 | 1 | 6 |
| Perišić Ana | Statistics in traffic | Perišić A. | Perišić A. | 2 | - | - | 2 | 1 | 4 |
| Poljičak Ana-Mari | Internal transport and storage | Poljičak A-M. | Poljičak A-M. | 2 | - | - | 2 | 1 | 5 |
| Šego Darijo | Logistic and supply chains | Šego D./Mečev D. | Šego D. | 3 | 1 | 1 | - | - | 5 |
| Kardum Goleš Ivana | English language III | Kardum Goleš I. | Kardum Goleš I. | 1 | - | - | 2 | 1 | 3 |
| Šego Darijo | Traffic corridors and merchandise flows | Šego D. | Šego D. | 2 | 2 | 1 | - | - | 4 |
| Nimac Krešimir | Traffic law | Nimac K. | Nimac K. | 2 | 1 | 1 | - | - | 3 |
| IV. semester | | | | | | | | | |
| Poljičak Ana-Mari | Transshipment resources | Poljičak A-M. | Poljičak A-M. | 3 | 1 | 1 | 1 | 1 | 6 |
| Olivari Luka | Theory of vehicle movement | Olivari Luka/ Bazijanac E. | Olivari Luka | 2 | - | - | 1 | 1 | 4 |
| Poljičak Ana-Mari | Freight-Distributional centres and terminals | Poljičak A-M. | Poljičak A-M. | 2 | 2 | 1 | - | - | 5 |
| Ljubić Hinić Martina | Technology and organization of public city transport | Ljubić Hinić M. | Ljubić Hinić M. | 2 | 1 | 1 | - | - | 5 |
| Kardum Goleš Ivana | English language IV | Kardum Goleš I. | Kardum Goleš I. | 1 | - | - | 2 | 1 | 3 |
| Mečev Dijana | Economics of traffic | Mečev D. | Mečev D. | 2 | 1 | 1 | - | - | 3 |
| Beljo Ivana | Operational research in traffic | Beljo I./ Mikulić Ž. | Olivari Luca | 2 | - | - | 1 | 1 | 4 |
| L – lectures, S – semin | nars, E – exerciese. | • | · | | • | | | | |

| | Undergraduate profess | ional study of Tr | affic (direction: Ro | oad traff | ic) – III. | . Study yea | r | | |
|---------------------------|---|---|--------------------------------|---------------------------|---------------------------|---------------------|---------------------------|---------------------|-----------------|
| (| COURSES | COU | COURSES COURSES | | COURSES | | | | |
| Head of course | Name | Lecturer | Seminars/ Exercises | L Hours per week | S Hours per week | Number of groups | E Hours per week | Number of groups | ECTS Credits |
| V. semester | | | | | | | | | |
| Šego Darijo | Infrastructures of road traffic | Šego D. | Šego D. | 3 | 2 | 1 | 1 | 1 | 6 |
| Bazijanac Ernest | Resources and exploitation of resources of road traffic | Bazijanac E./ Mavrin I./ Olivari Luka | Poljičak A-M./ Olivari Luka | 3 | - | - | 1 | 1 | 5 |
| Ljubić Hinić Martina | Technology and organization of road traffic | Ljubić Hinić M. | Ljubić Hinić M. | 3 | - | - | 2 | 1 | 7 |
| Ljubić Hinić Martina | Traffic techniques | Ljubić Hinić M. | Ljubić Hinić M. | 3 | - | - | 1 | 1 | 6 |
| Mileta Danijel | Information systems in road traffic | Mileta D. | Mileta D. | 2 | 1 | 1 | - | - | 3 |
| Šego Darijo | Transport geography* | Šego D. | Šego D. | 2 | 1 | 1 | - | - | 3 |
| Poljičak Ana-Mari | Traffic in tourism* | Poljičak A-M./ Ljubić Hinić M. | Poljičak A-M. | 2 | 1 | 1 | - | - | 3 |
| L – lectures, S – semin | nars, \mathbf{E} – exerciese. | | | | | | | | |
| *OPTIONAL COURS | E - the student selects one optiona | al courses offered. | | | | | | | |
| VI. semester | | | | | | | | | |
| Poljičak Ana-Mari | Safety and protection of transport processes | Poljičak A-M./ Ljubić Hinić M. | Poljičak A-M. | 3 | 1 | 1 | - | - | 5 |
| Šego Darijo | Professional practice | - | - | - | - | - | - | - | 15 |
| | Batchelor thesis | - | - | - | - | - | - | - | 10 |

6. ACADEMIC CALENDAR POLYTECHNIC OF ŠIBENIK

The academic calendar of the Polytechnic of Šibenik for the academic year 2021./2022. was adopted at the 29th session of the Expert Council of the Polytechnic of Sibenik (electronic session), which was held in July 2021.

WINTER SEMESTER:

- lectures in the winter semester runs from October 4. to December 23. 2021., and from January 7. to January 29. 2022.,
- winter holidays run from December 24. 2021. to January 5. 2022., and in that period the Polytechnic will not work with students,
- additional or/and consultative lectures for extraordinary 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 2021./2022.,
- the winter regular exam period runs from January 31. to February 26. 2022..

SUMMER SEMESTER:

- summer semester lectures run from February 28. to June 11. 2022.,
- additional or/and consultative lectures for extraordinary 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 2021./2022.,
- the summer regular exam period runs from June 13. to July 09. 2022.,
- summer holidays run from July 25. to August 19. 2022..

AUTUMN EXAM TIME PERIOD:

• the autumn regular exam period runs from August 22. to September 17. 2022..

SEMESTER TESTING:

- winter semester testing and summer semester enrollment will run from February 14. to February 18. 2022.,
- summer semester testing and enrollment in academic year 2022./2023. will run from July 11. to July 15., and from September 19. to September 30. 2022.

7. NATIONAL PUBLIC HOLIDAYS AND NON-WORKING DAYS IN THE REPUBLIC OF CROATIA, IN ACADEMIC YEAR 2021./2022.

| 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 17 th | Easter |
| April 18 th | Easter Monday |
| May 1 st | International Workers' Day |
| May 30 th | Croatian National day |
| June 16 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 ON UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC, FOR ACADEMIC YEAR 2021./2022.

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

| HEAD OF COURSE | NAME OF COURSE | EXAM DATES | | | | | | |
|---------------------------------|--|------------|----------|--------|--------|------------|-----------|--|
| | | January / | February | June | / July | August / S | September | |
| I. STUDY YEAR (I. semester). | | | | | | | | |
| Beljo Ivana | Mathematics | 08.02. | 22.02. | 21.06. | 05.07. | 30.08. | 13.09. | |
| Paić Josip | Physics | 09.02. | 23.02. | 17.06. | 01.07. | 31.08. | 14.09. | |
| Olivari Luka | Graphic communications | 11.02. | 25.02. | 15.06. | 29.06. | 02.09. | 16.09. | |
| Acalin Jerko | Basics of computer science | 02.02. | 16.02. | 17.06. | 01.07. | 26.08. | 09.09. | |
| Gaćina Nikolina | Knowledge of goods | 03.02. | 17.02. | 23.06. | 07.07. | 25.08. | 08.09. | |
| Kardum Goleš Ivana | English language I | 08.02. | 22.02. | 21.06. | 05.07. | 30.08. | 13.09. | |
| I. STUDY YEAR (II. ser | | | | | | | | |
| Ljubić Hinić Martina | Modern traffic systems | 02.02. | 16.02. | 23.06. | 07.07. | 24.08. | 07.09. | |
| Mileta Danijel | Basics of electrical engineering and electronics | 31.01. | 14.02. | 13.06. | 27.06. | 22.08. | 05.09. | |
| Šego Darijo | Traffic logistic | 04.02. | 18.02. | 17.06. | 01.07. | 26.08. | 09.09. | |
| Kardum Goleš Ivana | English language II | 08.02. | 22.02. | 21.06. | 05.07. | 30.08. | 13.09. | |
| Olivari Luka | Tehnical mechanics | 11.02. | 25.02. | 15.06. | 29.06. | 02.09. | 16.09. | |
| Radić Lakoš Tanja | Traffic and ecology | 08.02. | 22.02. | 20.06. | 04.07. | 23.08. | 06.09. | |
| II. STUDY YEAR (III. semester). | | | | | | | | |
| Olivari Luka | Basics of mechanical engineering | 11.02. | 25.02. | 15.06. | 29.06. | 02.09. | 16.09. | |

| Perišić Ana | Statistics in traffic | 08.02. | 22.02. | 20.06. | 04.07. | 30.08. | 13.09. |
|--|---|--------|--------|--------|--------|--------|--------|
| Poljičak Ana-Mari | Internal transport and storage | 01.02. | 15.02. | 14.06. | 28.06. | 24.08. | 07.09. |
| Šego Darijo | Logistics and supply chains | 07.02. | 21.02. | 24.06. | 08.07. | 26.08. | 09.09. |
| Kardum Goleš Ivana | English language III | 08.02. | 22.02. | 21.06. | 05.07. | 30.08. | 13.09. |
| Šego Darijo | Traffic corridors and merchandise flows | 02.02. | 16.02. | 24.06. | 08.07. | 23.08. | 06.09. |
| Nimac Krešimir | Traffic law | 04.02. | 18.02. | 17.06. | 01.07. | 26.08. | 09.09. |
| II. STUDY YEAR (IV. | . semester). | | | | | | |
| Poljičak Ana-Mari | Transshipment resources | 03.02. | 17.02. | 14.06. | 28.06. | 23.08. | 06.09. |
| Olivari Luka | Theory of vehicle movement | 09.02. | 23.02. | 17.06. | 01.07. | 31.08. | 14.09. |
| Poljičak Ana-Mari | Freight-Distributional centres and terminals | 04.02. | 18.02. | 15.06. | 29.06. | 24.08. | 07.09. |
| Ljubić Hinić Martina | Technology and organization of public city transport | 02.02. | 16.02. | 23.06. | 07.07. | 24.08. | 07.09. |
| Kardum Goleš Ivana | English language IV | 08.02. | 22.02. | 21.06. | 05.07. | 30.08. | 13.09. |
| Mečev Dijana | Economics of traffic | 01.02. | 15.02. | 16.06. | 30.06. | 25.08. | 08.09. |
| Beljo Ivana | Operational research in traffic | 08.02. | 22.02. | 21.06. | 05.07. | 30.08. | 13.09. |
| III. STUDY YEAR (V. | , semester). | | | | | | |
| Šego Darijo | Infrastructures of road traffic | 08.02. | 22.02. | 20.06. | 04.07. | 31.08. | 14.09. |
| Baijanac Ernest | Resources and exploitation of resources of road traffic | 10.02. | 24.02. | 17.06. | 01.07. | 26.08. | 09.09. |
| Ljubić Hinić Martina | Technology and organization of road traffic | 02.02. | 16.02. | 23.06. | 07.07. | 24.08. | 07.09. |
| Ljubić Hinić Martina | Traffic techniques | 02.02. | 16.02. | 23.06. | 07.07. | 24.08. | 07.09. |
| Mileta Danijel | Information systems in road traffic | 31.01. | 14.02. | 13.06. | 27.06. | 22.08. | 05.09. |
| Šego Darijo | Transport geography | 03.02. | 17.02. | 20.06. | 04.07. | 31.08. | 14.09. |
| Poljičak Ana-Mari | Traffic in tourism | 01.02. | 15.02. | 14.06. | 28.06. | 26.08. | 09.09. |
| | | | | | | | |
| III. STUDY YEAR (V) Poljičak Ana-Mari | Safety and protection of transport processes | 01.02. | 15.02. | 14.06. | 28.06. | 23.08. | 06.09. |

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



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

| 1. GENERAL COURSE IN | 1. GENERAL COURSE INFORMATION | | | | | | | | | |
|--|--|---|---|--|--|--|--|--|--|--|
| 1.1. Course title | MATHEMATICS | 1.8. Course code in ISVU | 129837 | | | | | | | |
| 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 | Luca Olivari, mag. math., assistant | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 45 + 0 + 0) | | | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1.11. Level of e- learning application (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 | X yes □ no | | | | | | | |
| 1.7. Credit score (ECTS) | 8 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | | | |

| 2. COURSE DESCRIPTION | | | | | |
|---|---|---|--|--|--|
| 2.1. Course objectives | The goal is to provide students with theoretical knowledge: to adopt knowledge and skills of the analytical way of thinking, and the logical way of oncluding in further education, to familiarize with basic concepts of mathematics and prepare them for their practical application. | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF | | | | |
| | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. | | | | |
| | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. | | | | |
| 2.3. Learning outcomes on the study programme level | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | |
| study programme lever | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. | | | | |
| | LO8: To solve problems in traffic by using analytical and / or graphical methods. | | | | |
| 2.4. Expected learning outcomes | Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO) | Level of LO: | | | |
| on the course level | | 1- remembering, | | | |



| | 2- understanding, |
|---|-------------------|
| | 3- application, |
| | 4- analysis, |
| | 5- evaluation, |
| | 6- synthesis |
| 1. To perform fundamental operations on sets. | 4 |
| 2. To carry out fundamental operations on matrices and vectors. | 4 |
| 3. To propose a method and solve systems of linear equations. | 5,4 |
| 4. To conduct basic analysis of functions of one variable. | 4 |
| 5. To derive the functions of one variable. | 4 |
| 6. To solve integrals by applying the appropriate integration techniques. | 4 |
| 7. To apply linear algebra and functional analysis methods in transport problems solving. | 4,5 |

| | Cons | tructive allignement | | | | |
|---|------|---|------------------|---|--|----------------|
| | 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. | - | 3 h |
| 2.5. Course content according to detailed curriculum schedule | 2. | Sets. Sets of numbers. | 1, 4, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to enumerate and distinguish basic concepts related to assemblies and perform basic operations on sets. | 6 h |
| | 3. | Matrices and determinants. The inverse matrix. Systems of linear equations. | 2, 3, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to to define matrices, perform basic computational operations with matrices, calculate the determinant and inverse of a matrix, recommend a method for solving a system of linear equations and solve a system and apply it to problems. | 9 h |



| and the second se | | | | | | |
|---|-----|---|------------------|--|---|------|
| | 4. | Vectors. Scalar, vector and mixed vector product. | 2, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to define vectors, perform basic computational operations with vectors. | 9 h |
| | 5. | Revision for colloquium. Colloquium. Functions | 1, 2, 3, 4, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | onstrate how to precises.students know how to define vectors, perfor basic computational operations with vectorsd read literature. onstrate how to recisesIn colloquium or written and oral exa students know how to define and distingu elementary functions, solve the composition functions and determine the inversion functions.d read literature. onstrate how to recises.In colloquium or written and oral exa students know how to to calculate limits.d read literature. onstrate how to recises.In colloquium or written and oral exa students know how to to calculate limits.d read literature. onstrate how to recises.In colloquium or written and oral exa students know how to solve derivatives.d read literature. onstrate how to recises.In colloquium or written and oral exa students know how to to examine the ba properties of a function, to analyze solutions obtained and to draw a graph of function based on them, and to comment on obtained solutions.d read literature. | 40 h |
| | 6. | Functions – basic terms, Elementary functions, Composition of the functions. Inverse function. | 1, 4, 7 | Write the colloquium. | In colloquium or written and oral exams students know how to define and distinguish elementary functions, solve the composition of functions and determine the inversion of functions. | 40 h |
| | 7. | Limits of sequences. Limit of the function. Continuous functions. | 4, 5, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to to calculate limits. | 9 h |
| | 8. | Derivatives. | 1, 4, 5, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to solve derivatives. | 6 h |
| | 9. | Basic analysis of functions of one variable. | 1, 4, 5, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to to examine the basic properties of a function, to analyze the solutions obtained and to draw a graph of the function based on them, and to comment on the obtained solutions. | 6 h |
| | 10. | Revision for colloquium. Colloquium. Integrals. | 1, 4, 5, 6, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | - | 40 h |
| | 11. | Indefinite Integrals. Definite Integrals. | 6,7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | • | 6 h |
| | 12. | Substitution Rule and Integration By Parts | 6, 7 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to solve an indefinite integral using the method of substitution and partial integration. | 6 h |



| | | Applications of Integration. | 4, 6, 7 | | and read literature. monstrate how to exercises. | In colloquium or written a students know how to analy graph of functions, and solve a | ze and sketch a | 6 h |
|---|---|--|---------|----------------------|--|---|-----------------|------|
| | 14. I | Applications of Integration. Revision for colloquium. Colloquium. | 6, 7 | Write the colloquit | ım. | - | | 40 h |
| | 15. I | Revision | | Listen to lectures a | nd read literature. | - | | 40 h |
| 3. EVALUATION OF STUDENT | TS` WOR | RK | | | | | | |
| 3.1. Students` obligations | In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list. Students who have during the course achieved: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through three colloquia); b) by passing the exam (written and oral part of the exam). | | | | | | egular or | |
| | Attenda | ance 1 | Wr | itten exam | 4 (without colloquia |) Project | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experin work | nental | Rea | search | | Practical work | | |
| for each activity so that the total number of ECTS points | Essay | | Rej | port | | Continuous examination | 1 | |
| corresponds to the credit score of the course)) | Colloqu | ium 4 (without written exam) | Sei | minar paper | | Other | | |
| | Class ad | ctivity 1 | Ora | al exam | 1 | Other | | |
| 3.3 Student workload | Student 1. 2. | Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 1. Attending classes and exercises 90 hours | | | | | | |



| 4. GRADING SYSTEM | | | | | | | | |
|---|------------------------------------|---|---|-------------|---|---------------------------------|--|--|
| 4.1. Grading seminar papers | - | | | | | | | |
| | 1 | Unsatisfactory | Satisfactory | | | Above average | ge | |
| 4.2. Grading colloquia/ written and oral exam | understanding. I terms and conc | memory, without a deeper Does not know or apply basic epts. Does not know how to the contents of the course with | Reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with examples. | | accurately and thoroughly explains the content of the material and logically connects and explains | | the principles, lains the content of nects and explains ted with examples. t originally given. | |
| | Active course | 70-74,9% of attendance | 75-79,9% of attendance | 80-89,9% of | attendance | 90-100% | of attendance | |
| | attendance | 2 points | 5 points | 10 pc | oints | 20 |) points | |
| | Colloquia/ Written exam | 2 | 3 | 4 | | | 5 | |
| 4.3. Final grade according to evaluation elements | | 50-64,9% | 65-79,9% | 80-89 | ,9% | 90 | -100% | |
| evaluation ciements | | 25 points | 30 points | 35 pc | oints | 40 points | | |
| | Oral exam | 2 | 3 | 5 | 5 | | 5 | |
| | Oral exam | 25 points | 30 points | 35 pc | oints | ts 40 points | | |
| | U | f acquired knowledge, skills and nces (teaching + final exam) | Numerical grade | | E | | ECTS grade | |
| 4.4. Final grade according to | | 90 - 100% | 5 (excellent) | | | А | | |
| absolute division | | 80-89,9% | 4 (very good) | | | B | | |
| | | 65 - 79,9% | 3 (good) | | | C D | | |
| | | $\frac{60-64,9\%}{50-59,9\%}$ | 2 (satisfactory) 2 (satisfactory) | | | | | |
| 5. ADDITIONAL COURSE INF | ORMATION | | | | | E | | |
| | | | Title | | | mber of copies n the library | Availability via other media | |



| 5.1. Compulsory literature (available in the library and via | Marušić, S., Mathematics I - book with solved examples, Zagreb, 2007. (selected chapters) | 7 | | | | |
|--|--|---|--|--|--|--|
| other media) | | | | | | |
| 5.2. Additional literature (at the moment of changes and/or amended of study programme) | Teaching material and exercises Babić Z., Tomić Plazibat N.: Business Mathematics, Faculty of economics University of Split, 2003 (selected chapters) Babić Z., Tomić N., Aljinović Z.: Matemathics for economists, Faculty of economics University of Split, 2004 (selected chapters) Harshbarger R.J., Reynolds J.J.: Mathematical Applications for the Management, Life and Social Sciences, Houghton Mifflin Company, Boston, 2004. (selected chapters) | | | | | |
| 5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences | The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association. | | | | | |
| 5.4. Informing about the course and contacting the teacher | It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail). | | | | | |



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

| 1. GENERAL INFORMATI | 1. GENERAL INFORMATION | | | | | | | |
|--|---|---|-------------------------------------|--|--|--|--|--|
| 1.1. Course title | PHYSICS | 1.8. Course code in ISVU | 187585 | | | | | |
| 1.2 Course lecturer | MSc. Josip Paić, senior lecturer 1.9. Course code in MOZVAG | | | | | | | |
| 1.3. Assistants and/or associates | Luka Olivari, mag. eng. mech., lecturer | Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (30 + 30 + 0 + 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1 st , course materials are on-line, 0% | | | | | | |
| 1.5. Course status (obligatory, optional) | Obligatory 1.12. Number of course revisions 4 | | 4 | | | | | |
| 1.6. Year of study | 1 st | 1.13. Modernization | X yes □ no | | | | | |
| 1.7. Credit score (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | |
| 2. COURSE DESCRIPTION | | | | | | | | |
| 2.1. Course objectives | The aim of the course is to master the physical laws transport profession rests. | s necessary for mastering and understanding the courses on wh | nich the technical knowledge of the | | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualificati | on level 4.2 according to the CROQF. | | | | | | |
| 2.3. Learning outcomes on the | LO4: To apply knowledge from the field of natural a | nd technical sciences to problems in road traffic. | | | | | | |
| study programme level | LO8: To solve problems in traffic by using analytical | and / or graphical methods. | | | | | | |
| | | | Level of LO: | | | | | |
| | | | 1- memory, | | | | | |
| 2.4. Expected learning outcomes | | | 2- understanding, | | | | | |
| on the course level (4-10 | Learning outcomes by Bloom: (maximum 2 werbs f | or LO) | 3- application, | | | | | |
| learning outcomes) | | | 4- analysis, | | | | | |
| 3, | | | 5- evaluation, | | | | | |
| | | | 6- synthesis. | | | | | |



| | 1 | . Describe the basic concepts in | physics | | | 2 | |
|---|---|--|------------------|---|--|--|----------------|
| | 2 | 2. Recognize physical quantities | and units of m | neasure. | | 2 | |
| | 3 | 6. Graphically and analytically re | educe the syste | em of vectors, and divide the vectors into their | components. | 3 | |
| | 4 | . Compare the basic laws of mo example. | tion of a partio | cle or solid body and identify the type of motio | on in a given | 4, 4 | |
| | 5 | Distinguish Newton's laws, eq of motion, and choose appropr | | ditions, laws of conservation of mechanical en olve a given problem. | ergy and amount | 4, 5 | |
| | 6. Analyze the movement of the body from a graphical representation of the path, displacement, speed or acceleration as a function of time, and the conversion of various forms of energy into work and vice versa. | | | | | 4 | |
| | 7. Identify the causes of motion of a particle or solid, and evaluate the effects of the force on the particle or solid. | | | | | 4, 5 | |
| | 8 | Distinguish between the basic law, Archimedes's law, continu solve a given problem. | 4, 5 | | | | |
| | 9. Synthesize the adopted laws to solve complex problems | | | | | 6 | |
| 2.5. Course content according to detailed curriculum schedule | Cons | tructive allignement | | | | | |
| | No | Thematic unit | LO of the course | Content/teaching methods | E | valuation | 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, 2, 3, 4 | Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning page of the course. The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving. | mean and curre acceleration, to a At the colloquiun exam they defin concepts, define, physical quantiti | istinguish between the nt values of worry and analyze body movements. m or the written and oral are and explain the basic explain and calculate the es and units of measure. | 4 h |
| | 2. | Free fall. Vertical shot. Curved track motion (horizontal and oblique shot, circular motion). | 1, 4, 5 | The lecture is performed with prepared presentations, recorded experiments and independently solving simple | describe comple | ee fall. Investigate and ex movements. Analyze as uniformly accelerated | 4 h |



| | | | examples. The exercises demonstrate how | motion. At the colloquium or the written | |
|----|----------------------------------|---------------|---|---|------|
| | | | to solve tasks. Independent task solving. | and oral exam they know: to define, | |
| | | | | explain, identify and compare types of | |
| | | | | motion; solve numerical tasks from the | |
| | | | | specified area. | |
| | Forces and laws of motion | | The lecture is performed with prepared | Describe the interaction of body and types | |
| | (force and mass, Newton's | | presentations, recorded experiments and | of forces. Draw a force diagram. Add up | |
| | laws of mechanics, body | | independently solving simple examples. | force vectors. Apply Newton's Laws. | |
| | weight and density). The | | The exercises demonstrate how to solve | Relate force impulse and amount of | |
| | amount of motion and the law | | tasks. Independent task solving. | motion. Apply the law of conservation of | |
| | of conservation of the amount | | | the amount of motion. At the colloquium | |
| 3. | of motion. | 1, 3, 4, 5, 6 | | or the written and oral exam they know: | 4 h |
| | | | | to define, explain and distinguish | |
| | | | | Newton's laws and the laws of | |
| | | | | conservation of the amount of motion; | |
| | | | | choose physical laws to solve a given | |
| | | | | problem, solve numerical problems from | |
| | | | | the specified area. | |
| | Friction. Centripetal force. | | The lecture is performed with prepared | Relate friction to centripetal force and | |
| | Elastic force. Motion of a rigid | | presentations, recorded experiments and | elastic force. Explain the concept of | |
| | body (rigid body, force | | independently solving simple examples. | centripetal force and centripetal | |
| | moment, rotation of a rigid | | The exercises demonstrate how to solve | acceleration. Distinguish the motion of a | |
| | body about a fixed axis, | | tasks. Independent task solving. | material point and a rigid body and make | |
| | moment of inertia) | | | an analogy. | |
| 4. | | 1, 3, 4, 5, 6 | | At the colloquium or the written and oral | 4 h |
| | | | | exam they can define and explain friction, | |
| | | | | analyze the influence of friction; identify | |
| | | | | the causes and type of motion, evaluate | |
| | | | | the consequences of the action of forces | |
| | | | | and moments; solve numerical tasks from | |
| | | | | the specified area. | |
| 5. | Rotation work and power. | 1, 4, 5, 7 | The lecture is performed with prepared | Relate work and power to work and | 4 h |
| 5. | Rotational kinetic energy. | 1, 4, 3, 7 | presentations, recorded experiments and | power when rotating. Solve and comment | 4 11 |



| 1 | | | 1 | | |
|----|----------------------------------|------------|---|---|------|
| | Moment of amount of motion. | | independently solving simple examples. | on examples. At the colloquium or the | |
| | An analogy between the laws | | The exercises demonstrate how to solve | written and oral exam they can define and | |
| | of translation and rotation. | | tasks. Independent task solving. | explain work, strength, energy and other | |
| | | | | phenomena during rotation; solve | |
| | | | | numerical tasks from the specified area. | |
| | Statics (force action on a rigid | | The lecture is performed with prepared | Relate the action of force to a material | |
| | body, equilibrium of a rigid | | presentations, recorded experiments and | point and to a rigid body. Apply and | |
| | body affected by more forces). | | independently solving simple examples | analyze equilibrium equations for a solid | |
| 6. | The action of parallel forces on | 1, 3, 5, 9 | The exercises demonstrate how to solve | body, written and oral examination, | 4 h |
| 0. | a rigid body. The emphasis. | 1, 5, 5, 9 | tasks. Independent task solving. | evaluate the consequences of the action of | 4 11 |
| | | | | a system of forces and / or static moment | |
| | | | | using graphical and analytical methods; | |
| | | | | solve numerical tasks from the given area. | |
| | A pair of forces. Solid-state | | The lecture is performed with prepared | Determine the equilibrium conditions of a | |
| | equilibrium conditions | | presentations, recorded experiments and | rigid body using examples. Apply and | |
| | (examples). Types of balance. | | independently solving simple examples. | analyze equilibrium equations for a solid | |
| 7. | Motion relativity and inertial | 1, 3, 5 | The exercises demonstrate how to solve | body, written and oral examination, | 4 h |
| /. | forces (the principle of | 1, 5, 5 | tasks. Independent task solving. Individual | evaluate the consequences of the action of | 4 11 |
| | relativity, inertial forces in a | | preparation for the colloquium. | a system of forces and / or static moment | |
| | straight and circularly | | | using graphical and analytical methods; | |
| | accelerated system). | | | solve numerical tasks from the given area. | |
| | Work and force (work of | | The lecture is performed with prepared | Link energy change and work done. Link | |
| | constant force, work of | | presentations, recorded experiments and | the concept of work and strength. At the | |
| | variable force). | | independently solving simple examples. | colloquium or the written and oral exam | |
| 8. | | 1, 6, 7, 9 | The exercises demonstrate how to solve | they can define and explain work and | 4 h |
| | | | tasks. Independent task solving. | strength, identify the type of motion of a | |
| | | | | particle or solid, solve numerical | |
| | | | | problems in the field of kinematics. | |
| | The work of the resultant force. | | The lecture is performed with prepared | Describe examples of conversion of | |
| | Energy (kinetic energy, | | presentations, recorded experiments and | different forms of energy. Apply the law | |
| 9. | potential energy, energy | 1, 6, 7 | independently solving simple examples. | of conservation of energy. Express utility. | 4 h |
| | conservation law. | | The exercises demonstrate how to solve | At the colloquium or the written and oral | |
| | | | tasks. Independent task solving. | exam they can define and explain the | |
| | · · · | | • | · · · · · · · · · · · · · · · · · · · | |



| | | | | | basic terms in the specified area, identify the type of motion of a particle or solid body; evaluate the action of force; analyze energy conversions; solve numerical tasks in the field of kinematics. | |
|---|-----|---|---------|---|---|-----|
| 1 | 10. | Collisions. Mechanical tools and machines (mechanical effect of the machine, slope, wedge, wheels and pulleys, machine efficiency). | 1, 5, 6 | The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving. | Apply the law of conservation of motion and the law of conservation of energy. At the colloquium or the written and oral exam they can define, explain and distinguish the terms and physical laws from the specified area; solve numerical tasks. | 4 h |
| 1 | 11. | Gravity (Newton's law of general gravity). The work of gravitational force and gravitational potential energy. Gravitational phenomena around the Earth. | 1, 5 | The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving. | Describe the historical development of the idea of the motion of the celestial body and the variability of scientific ideas. At the colloquium or the written and oral exam they can define, explain and distinguish the terms and physical laws from the specified area; solve numerical tasks. | 4 h |
| 1 | 12. | Gravity in the solar system. Gravity in space. Fluid mechanics (aggregate states and properties of substances, fluids at rest) | 1, 5, 8 | The lecture is performed with prepared presentations, recorded experiments and independently solving simple examples. The exercises demonstrate how to solve tasks. Independent task solving. | Describe the motions and interactions of the body in the solar system. Explain the expression for the first and second cosmic velocities and relate them to the weightless state. Analyze examples involving the application of Newton's law of gravity. At the colloquium or the written and oral exam they can define, explain and distinguish basic concepts in fluid mechanics; solve numerical problems in the field of fluid mechanics. | 4 h |
| 1 | 13. | The buoyancy. Archimedes' Law. Fluids in motion (fluid | 1, 8, 9 | The lecture is performed with prepared presentations, recorded experiments and | Describe basic terms in hydrostatics. Apply expressions to examples. At the | 4 h |



| 1 | | | | | | | | | | |
|-------------------------------------|--------|----------------------------------|--|----------------------|----------------------------|------------------------------|--------------------------------------|-------------------|-----------|--|
| | | flow and velocity | , continuity | | independently solvin | g simple examples. | colloquium or the written a | and oral exam | | |
| | | equation) | | | | nstrate how to solve | they can define, explain an | - | | |
| | | | | | tasks. Independent tas | k solving. | basic concepts in fluid me | | | |
| | | | | | | | numerical problems in the | field of fluid | | |
| | | | | | | | mechanics. | | | |
| | | Bernoulli | equation | | The lecture is perfo | | | oncepts in | | |
| | | (applications of | | | presentations, record | - | hydrodynamics. Apply | Bernoulli's | | |
| | | equation). Force in real liquids | | independently solvin | | equation to examples. At the | - | | | |
| | 14. | (shape of free surfa | | 1, 8, 9 | | strate how to solve | or the written and oral ex | • | 4 h | |
| | | dissipative forces in | n liquids) | | tasks. Independent tas | k solving. | define, explain and dist | U | | |
| | | | | | | | concepts in fluid mech | | | |
| | | | | | | | numerical problems in the mechanics. | field of fluid | | |
| | | | | | | | At the colloquium or the w | mitton and anal | | |
| | | Resistance of the | The lecture is performed with prepared | | exam they can define, | | | | | |
| | 15. | Flow and Chaos Ph | - | 1, 8 | presentations, record | - | distinguish basic concep | - | 4 h | |
| | 15. | consideration. | rysics. r mai | 1, 0 | independently solving | | mechanics; solve numerica | | | |
| | | consideration. | | | They prepare individu | ally for the exam. | the field of fluid mechanics | 1 | | |
| 3. EVALUATION OF STUD | ENT V | WOR | | | | | | | | |
| | In acc | cordance with the Ru | lebook on St | udy and the R | Rulebook on Assessmen | t and Evaluation of Stu | Ident Performance: Full-time | e students are re | quired to | |
| 3.1. Student obligations | attend | d classes at least 70% | , which is als | so a requireme | ent for obtaining the lect | urer`s signature. Stude | nts can take the final exam in | the course in ty | wo ways: | |
| | a) du | ring the course, by ta | king colloqui | ums and oral j | part of the exam; b) pass | sing the written and ora | l part of the exam. | | | |
| | Atten | ding classes | 2 | | Written exam | 2 (without | Project | | | |
| 3.2. Student work monitoring | | | | | | colloquiums) | | | | |
| (enter the share of ECTS credits | Expe | rimental work | | | Research | | Practical work | | | |
| for each activity so that the total | Essay | 7 | | | Report | | Continuous check | | | |
| number of ECTS credits | Collo | quiums | 2 (without w | vritten | Seminar paper | | Field works or Study | | | |
| corresponds to the course credit | | | exam) | | | | trips | | | |
| value) | Teach | ning activities | | | The oral part of | 1 | (other) | | | |
| | | | | | exam | | | | | |
| | | | | | | | | | | |



| | | ases is 1 ECTS credit for 30 hours of v k and presentation (30 hours). | work per semester and is estimated as goin | g to fieldwork or study trips (30 hours), | | |
|---------------------------------|----------------------------|---|---|--|--|--|
| | Obligation | k and presentation (50 hours). | Hours (estimated) | Hours (estimated) | | |
| 3.3. Student work-load | 1. Attending classe | 28 | 60 | | | |
| | | d written exam individual preparation | 60 | | | |
| | 3. Oral exam indivi | idual preparation | 30 | | | |
| 4. GRADING SYSTEM | | | | | | |
| | Elements of evaluation | Bad | Satisfying | Above average | | |
| | Physical quantities and | Nonstandard physical units have not | Nonstandard units have been converted to | Nonstandard units have been converted | | |
| | their units of | been converted to basic or have been | basic units with minor errors in | to base units without error. | | |
| | measurement | converted wrong. | calculation. | | | |
| | Structure, traceability, | The task is not properly structured, it | The task is satisfactorily structured, | The task is clearly structured, complete, | | |
| | legibility and orderliness | is not traceable, and it is not readable. | traceable and readable. The diagrams and | very neat and legible. The diagrams are | | |
| | of the procedure, | Diagrams and sketches are non- | sketches are meaningful, neat with minor | completely accurate, clear and very | | |
| 4.1. Evaluation of written exam | diagrams and sketches | existent, inaccurate, messy, unclear | errors. | neat. | | |
| | | and ambiguous. | | | | |
| | Application of | Uses expressions that do not describe | Uses expressions that describe the | Uses expressions that describe the | | |
| | appropriate equation | the problem specified, or incorrectly | problem in question, accurately derives | problem in question, accurately derives | | |
| | (formulas) and the final | expresses the physical unit from the | physical quantities from the expression, | physical quantities from expressions, | | |
| | result. | expression. Numeric values are not | incorporates numerical values into the | lists units of measure without errors, the | | |
| | | included in the expression. The end | expression with smaller numbers, the | final result is completely accurate. | | |
| | | result is incorrect. | final result has smaller deviations from | | | |
| | Knowledge and | It responds by memory, without a | the exact result. It reproduces the basic concepts and | Knowledge is at the level of analysis, | | |
| | expression. | deeper understanding. Does not know | without difficulty imparts new | synthesis and evaluation. Observes the | | |
| | expression. | or apply basic terms and concepts. | knowledge, understands the material, | principles of physical laws, accurately | | |
| | | Does not know how to apply or | explains the terms and concepts supports | and thoroughly explains the content of | | |
| 4.2. Evaluation of oral exam | | explain the contents of the course with | them with examples. Knows the expert | the material, and logically connects and | | |
| | | examples. | terminology. | explains the terms and concepts and | | |
| | | r r | | 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 The oral part of exem | 2 50-64,9% 50-64,9 points 2 50-64,9 points | 3 65-79,9% 65-79,9 points 3 65-79,9 points | 4 80-89,9% 80-89,9 points 4 80-89,9 points | 5 90-100% 90-100 points 5 90-100 points |
| 4.4. Formation of the final grade based on the absolute distribution | competencies (tea 90 - 80 - 65 - 60 - | d knowledge, skills and aching + final exam) 100% 89,9% 79,9% 64,9% 59,9% | Numerical grade 5 (excellent) 4 (very good) 3 (good) 2 (sufficient) 2 (sufficient) | | ECTS grade A B C D E |
| 5. ADDITIONAL INFORMATI 5.1. Compulsory literature (available in the library and via other media) | | E Title , Polytechnic of Šibenik, Šibenik, 2017. | | Number o copies in t library | he Availability via other media |
| | Teaching materials from the lectures and exercises on the e-learning system of the Polytechnic for the course Introduction to Machanical Engineering | | | nic for | on-line (e-learning) |

5.2. Additional literature (at the
moment of changes and/or
amended of study programmerTeaching materials from the lectures and exercises on the e-learning system of the Polytechnic for
the course Introduction to Mechanical Engineering.
Kulišić, P.: Mechanics and Heat, School book, Zagreb, 2005.
Kulišić, P.: Solved problems in Mechanic and Heat, School book, Zagreb, 2005.
Kulišić, Varićak, Vernić,: Physics – collection of numerical tasks 1-4, School book, Zagreb,
2012
Halliday, Resnick, Walker: Fundamentals of phisics, Sixth Edition--on-line (e-learning)
city library
city library
city library
city library
city library
city library



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



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

| 1. GENERAL INFORMATI | ON | | | | |
|--|---|--|---|--|--|
| 1.1. Course title lecturer | GRAPHIC COMMUNICATIONS | 1.8. Course code in ISVU | 129836 | | |
| 1.2. Course title lecturer | Luka Olivari, mag. eng. mech., 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | |
| 1.7. Credit score (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20% X More than 20 % □ | | |
| 2. COURSE DESCRIPTION | I | | | | |
| 2.1. Course objectives | to read, understand and produce technical drawings, | retical knowledge, acquired skills and practical examples to: Gain to use and understand the standards of drawing in technical drawing e Auto-CAD computer program) when creating technical document | gs, orthogonal projections, spatial | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF. | | | | |
| | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | | |
| 2.3. Learning outcomes on the study programme level | LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process. | | | | |
| study programme level | LO8: To solve problems in traffic by using analytical and / or graphical method. | | | | |
| 2.4. Expected learning outcomes on the course level (4-10 learning outcomes) | Learning outcomes by Bloom: (maximum 2 werbs for LO) | | Level of LO: 1 - memory, 2 - understanding, 3 - application, | | |



| | | | | | | 4- analysis, 5- evaluation, 6- synthesis. 1, 2 | |
|---|--------|---|------------------|---|---|---|----------------|
| | 1. | | | | | | |
| | 2. | 1 | 5 | 0 1 0 | ven isometric view | 5,4 | |
| | | 3. Design an isometric representation of the body based on the given orthogonal projections | | | | | |
| | | 4. Distinguish the rules of technical presentation and apply them to the technical drawing. | | | | | |
| 25.0 | 5. | 5. Draw a technical drawing in the AutoCAD computer program. | | | | 4 | |
| 2.5. Course content according to detailed curriculum schedule | Constr | ructive allignement | | | | | |
| | No | Thematic unit | LO of the course | Content/teaching methods | Ev | aluation | Time needed |
| | 1. | Introductory presentation (introducing students to the content and obligations of the course). The importance of graphical communications. Short history and development of graphic communications | 1 | Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning course page. | - | n or the written and oral e and explain the basic | 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. | exam: define an concepts; distingu | n or the written and oral nd explain the basic ish between the rules of ut and apply them to the ; | 4 h |
| | 3. | Fundamentals of geometric structures. | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise. | exam: define an concepts; draw based on a g distinguish betw | n or the written and oral nd explain the basic orthogonal projections iven isometric view; een the rules of the and apply them to the ; | 4 h |



| 4. | Technical spatial sketching and construction. Orthogonal projections. European and American display mode. | 1, 2, 3 | Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise. | At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; form an isometric representation of the body based on given orthogonal projections; | 4 h |
|----|--|---------|---|--|-----|
| 5. | Display rules in technical drawings. Applying measures. | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise. | At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing; | 4 h |
| 6. | Markings on the technical drawing (marks of machining, roughness, tolerances of dimensions and shape) | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise. | At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing; | 4 h |
| 7. | Cross sections and rules for screwing. | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise. | At the colloquium or the written and oral exam: define and explain the basic concepts; draw orthogonal projections based on a given isometric view; distinguish between the rules of the technical layout and apply them to the technical drawing; | 4 h |
| 8. | Spatial presentation. | 1, 3, 4 | Listen to a lecture and read literature. The exercises demonstrate the rules of technical presentation. Independent exercise. | At the colloquium or the written and oral exam: define and explain the basic concepts; form an isometric representation of the body based on given orthogonal projections; distinguish | 4 h |



| | | | | between the rules of the technical view | |
|-----|-------------------------------|---------|--|--|-----|
| | | | | and apply them to the technical drawing. | |
| | Introduction to Computer- | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | Aided Design. CAD / CAM | | exercises demonstrate the rules of technical | exam: define and explain the basic | |
| | systems. Software packages | | presentation. Independent exercise. | concepts; distinguish between the rules of | |
| 9. | and scope. | 1, 4, 5 | | the technical layout and apply them to the | 4 h |
| | | | | technical drawing; draw a technical | |
| | | | | drawing in an AutoCAD computer | |
| | | | | program. | |
| | Special markings on | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | technical drawings and | | exercises demonstrate the rules of technical | exam: define and explain the basic | |
| | simplifications. Details on | | presentation. Independent exercise. | concepts; distinguish between the rules of | |
| 10. | technical drawings. | 1, 4, 5 | | the technical layout and apply them to the | 4 h |
| | AutoCAD, interface and | | | technical drawing; draw a technical | |
| | basic commands. | | | drawing in an AutoCAD computer | |
| | | | | program. | |
| | AutoCAD, commands for | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | drawing, using and creating a | | exercises demonstrate the rules of technical | exam: define and explain the basic | |
| | new layer. | | presentation. Independent exercise. | concepts; distinguish between the rules of | |
| 11. | | 1, 4, 5 | | the technical layout and apply them to the | 4 h |
| | | | | technical drawing; draw a technical | |
| | | | | drawing in an AutoCAD computer | |
| | | | | program. | |
| | AutoCAD, commands for | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | applying measures, creating | | exercises demonstrate the rules of technical | exam: define and explain the basic | |
| | a template, printing | | presentation. Independent exercise. | concepts; distinguish between the rules of | |
| 12. | drawings. | 1, 4, 5 | | the technical layout and apply them to the | 4 h |
| | | | | technical drawing; draw a technical | |
| | | | | drawing in an AutoCAD computer | |
| | | | | program. | |
| | AutoCAD, creation and | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| 13. | manipulation of objects. | 1, 4, 5 | exercises demonstrate the rules of technical | exam: define and explain the basic | 4 h |
| | | | presentation. Independent exercise. | concepts; distinguish between the rules of | |



| | | AutoCAD, | self-made | | Listen to a lecture a | nd read literature. The | the technical layout and appl technical drawing; draw drawing in an AutoCA program. At the colloquium or the wr | a technical D computer | |
|--|----------|---|--------------------------------|----------------|---|---|--|--|-----------|
| | 14. | workshop drawir | ng. | 1, 4, 5 | exercises demonstrat presentation. Indepen | te the rules of technical ndent exercise. | exam: define and explain concepts; distinguish betweet the technical layout and appl technical drawing; draw drawing in an AutoCAI program. | n the rules of y them to the a technical | 4 h |
| | 15. | Final co repetition and pro the exam. | onsideration, eparation for | - | Listen to a lecture an prepare individually | nd read literature. They for the exam. | - | | 4 h |
| 3. EVALUATION OF STUE | ENT W | ORK | | | | | | | |
| 3.1. Student obligations | attend o | classes at least 70% | 6, which is als | o a requireme | ent for obtaining the lea | | udent Performance: Full-time nts can take the final exam in al part of the exam. | | - |
| 3.2. Student work monitoring | Attendi | ng classes | 2 | | Written exam | 2 (without colloquiums) | Project | | |
| (enter the share of ECTS credits | Experir | nental work | | | Research | | Practical work | | |
| for each activity so that the total | Essay | | | | Report | | Continuous check | | |
| number of ECTS credits corresponds to the course credit | · · · | | 2 (without we exam) | vritten | Seminar paper | | Field works or Study trips | | |
| value) | | ng activities | | | The oral part of exam | 1 | (other) | | |
| | | workload on all tion of seminar wo | | | - | r semester and is estimated | ated as going to fieldwork or | study trips (3 | 0 hours), |
| 3.3. Student work-load | | Obligation | | | | Hours (estimated) | | | |
| | 1 | Attending class | | | | 60 | | | |
| | | Colloquiums ar | nd written exam | m individual 1 | preparation (drawing) | 30 | | | |



| | 3. Colloquiums and (AutoCAD) 4. Oral exam individual | d written exam individual preparation idual preparation | 30 30 | |
|---------------------------------|--|--|--|---|
| 4. GRADING SYSTEM | | | | |
| | Elements of evaluation | Bad | Satisfying | Above average |
| | Technical drawing | Drawing incomplete, imprecise and sloppy. Made on inadequate paper size. | Drawing neatly crafted with a small number of imprecise errors, a clear distinction between types of lines. | Drawing very neatly made without errors. |
| 4.1. Evaluation of written exam | Distinguish and apply the rules of technical drawing | Does not know the rules, does not apply or misapplies the elements of the technical representation. | Knows most of the rules of the technical view, correctly applies the basic, and with minor mistakes, the other elements of the technical view. | Knows the rules of the technical view, and correctly applies the elements of the technical view. |
| 4.1. Evaluation of written exam | AutoCAD computer program | Does not knows interface or basic commands. It is not capable of drawing in a computer program. | Knows basic and some advanced commands in a computer program, uses them with minor errors. He is able to create a technical drawing in a computer program with a little help and suggestions. | Knows basic and advanced commands in a computer program, uses them without errors. Able to fully draw a technical drawing in a computer program. |
| 4.2. Evaluation of oral exam | Knowledge and expression. | It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples. | 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. |



| | Colloquiums/ | - | | 3 | | 4 | 5 |
|---|---|--|--|---|--------------------------|---------------------------------------|---|
| | Written exam 10-12 points | | | 13-15 points 16- | | -17 points | 18-20 points |
| 4.3. Forming the final grade | Colloquiums/ | 2 | | 3 | | 4 | 5 |
| according to the evaluation elements | AutoCAD | 10-12 points | | 13-15 points | 16 | -17 points | 18-20 points |
| | The oral part of exem | 2 | | 3 | | 4 | 5 |
| | | 10-12 points | | 13-15 points | 16 | -17 points | 18-20 points |
| | | ed knowledge, skills and aching + final exam) | | Numerical grade | | | ECTS grade |
| 4.4. Formation of the final grade | 90 - | - 100% | | 5 (excellent) | | | А |
| based on the absolute | 80 - | 89,9% | | 4 (very good) | | | В |
| distribution | 65 - | 79,9% | | 3 (good) | | | С |
| | 60 - | 64,9% | | 2 (sufficient) | | | D |
| | 50 - | 59,9% 2 (sufficient) | | Е | | | |
| 5. ADDITIONAL INFORMATI | ION ABOUT COURSE | | | | | | |
| 5.1. Compulsory literature (available in the library and via | Title | | | | | Number of copies in the library | Availability via other media |
| other media) | | cal drawing in the image wit utoCAD software 2008, MIS | | |)9. | - | City library City library |
| 5.2. Additional literature (at the moment of changes and/or amended of study programme) | the course Opalić, M., Kljajin, M. Brod, 2007. Klem N., Koški Ž., O University of Osijek, O Galeta T., Glazina V., | n the lectures and exercises o , Sebastijanović, S.: Techni Otković I.: Technical drawi sijek 2006. Kljajin M.: AutoCAD Fun , University of Osijek, Slavo | ical drawing ing and Ca ndamentals | g, Zrinski d.d., Čakovec/ AD, Faculty of civil en of Technical Drawing, l | /Slavonski gineering, | - | on-line (e-learning) - - - On-line On-line |



| | Herold Z .: Computer and Engineering Graphics, Faculty of mechanical and naval engineering, | | | | | |
|---------------------------------|--|--|--|--|--|--|
| | University of Zagreb, Zagreb 2003. | | | | | |
| | Budimir D .: Exercises from AutoCAD, Faculty of transport and traffic sciences, University of | | | | | |
| | Zagreb, Zagreb 2010. | | | | | |
| 5.2 Quality assumence matheda | The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of | | | | | |
| 5.3. Quality assurance methods | attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for | | | | | |
| that ensure the acquisition of | further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations | | | | | |
| knowledge, skills and | as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the | | | | | |
| competences | Croatian employment service on the annual state of student employment, surveys from employers and Alumni association. | | | | | |
| | It is the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of classes or possible | | | | | |
| 5.4. Informing about the course | adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers | | | | | |
| and contacting the course | 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 | | | | | |
| lecturer | 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 the new course or the course that has been supplemented and / or amended or updated.

| 1. GENERAL COURSE INFORMATION | | | | | | | |
|--|---|---|---|--|--|--|--|
| 1.1. Course title | BASICS OF COMPUTER SCIENCE | 1.8. Course code in ISVU129840 | | | | | |
| 1.2. Course lecturer | Jerko Acalin, grad. eng. inf., 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 + 45 + 0 + 0) | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | | |
| 1.7. Credit score (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | |

| 2. COURSE DESCRIPTION | |
|---|---|
| 2.1. Course objectives | The objective is for students to: get acquainted with the role and organization of information systems, as well as the application of information technologies in work and business, adopt and expand basic technical knowledge on information technologies, acquire knowledge to understand current information and communication technologies. The aim of the course is to acquaint students with the maintenance and introduction of new technologies, independent use and renewal of the existing IT structure. |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF |
| | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. |
| | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. |
| 2.3. Learning outcomes on the study programme level | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. |
| study programme level | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. |
| | LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process. |



| | LO8: To solve problems in traffic by using analytical and / or graphical methods. | |
|---|--|---|
| 2.4. Expected learning outcomes on the course level | Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO) | Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis |
| | 1. Define and explain the notions IS and IT, | 1, 2 |
| | 2. Use Microsoft office package, | 3 |
| | 3. Analyse the basic structure of computers and network systems, | 4 |
| | 4. Analyse and evaluate IS security, | 4, 5 |
| | 5. Present acquired knowledge, ideas, problems and solutions, both individually and in teams | 6 |

| | Cons | tructive allignement | | | | |
|---|------|--|------------------|---|---|----------------|
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | Time needed |
| 2.5. Course content according to detailed curriculum schedule | 1. | Introduction to the course and a detailed syllabus. Exercises: introduction to e- learning and web-mail | - | Students listen to lectures and read literature. In seminar classes, they get acquainted with the content of the course and documents on the e-learning page of the course by working independently on a computer. | - | 2 h |
| | 2. | Informatics and computing Exercises: MS Windows basics | 1 | Students listen to lectures and read literature. Get acquainted with the basics of MS Windows on computers. | They know how to use the MS Windows operating system at a colloquium or a written and oral exam | 6 h |
| | 3. | Historical development of computing Exercises: MS Windows file management | 1 | Students listen to lectures and read literature. Get acquainted with the basics of MS Windows Explorer on computers. | They know how to use the MS Windows Explorer at a colloquium or a written and oral exam | 6 h |



| 4. | Information society Exercises: MS Word obasics | 2 | Listen to lectures and read literature. Work on computers. | They know how to use the MS Windows Word at a colloquium or a written and oral exam | 6 h |
|-----|--|------------|---|---|------|
| 5. | Computer networks and Internet Exercises: MS Word text editing | 2 | Listen to lectures and read literature. Work on computers. | They know how to use the MS Word for text editing at a colloquium or a written and oral exam | 6 h |
| 6. | Planning and designing of IS Exercises: MS Word – making template | 3 | Listen to lectures and read literature. Work on computers. | They know how to use the MS Word for templates at a colloquium or a written and oral exam | 6 h |
| 7. | Information systems and technologies Exercises: MS Word – seminar paper example | 3 | Listen to lectures and read literature. Work on computers. | They know how to use the MS Word to create seminar paper at a colloquium or a written and oral exam | 6 h |
| 8. | Revision for the colloquium Colloquium 1. | 1, 2, 3, 4 | Listen to lectures and read literature. Work and take the test on computers. | They work on the colloquium on a computer and send the result via web-mail | 36 h |
| 9. | Von Neumanov computer model Exercises: MS Excel – table formatting | 4 | Listen to lectures and read literature. Work on computers. | At the colloquium or written and oral exam, they know how to format tables using MS Excel. | 6 h |
| 10. | Safety of IS Exercises: MS Excel – application of basic formula | 4, 5 | Listen to lectures and read literature. Work on computers. | They know how to apply the basic functions and formulas in MS Excel at a colloquium or written and oral exam. | 6 h |
| 11. | Exercises: MS Excel – graphs | 4, 5 | Listen to lectures and read literature. Work on computers. | At the colloquium or written and oral exam, they know how to create various types of charts in MS Excel. | 6 h |
| 12. | MS Excel – making templates | 6 | Listen to lectures and read literature. Work on computers. | At the colloquium or written and oral exam, they know how to create a template in MS Excel. | 6 h |
| 13. | Power Point – making presentation with ready-made templates | 6 | Listen to lectures and read literature. Work on computers. | At the colloquium or written and oral exam, they know how to make a presentation using ready-made forms. | 6 h |
| 14. | Power Point – making presentation by editing slide matrix | 6 | Listen to lectures and read literature. Work on computers. | At the colloquium or written and oral exam, they know how to make a | 6 h |



| | | 1 | | 1 | | | | | | |
|---|---|-----------------------------|---------|---------|--|---|---------------|------|--|--|
| | | | | | | presentation by creating the | eir own slide | | | |
| - | | | | | | matrix | | | | |
| | | | 4, 5, 6 | | ctures and prepare the test. Write the test | They work on the col computer and send the resu | - | 40 h | | |
| 3. EVALUATION OF STUDEN | TS` 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 <u>AAI@EduHr</u> 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). | | | | | | | | | |
| | Attendance | 1 | Writte | n exam | 3 (without colloquia) | Project | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Resear | ch | | Practical work | | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | t | | Continuous examination | 1 | | | |
| corresponds to the credit score of the course)) | Colloquium | 3 (without written exam) | | r paper | | Other | | | | |
| | Class activity | | Oral e | xam | 1 | Other | | | | |
| 3.3 Student workload | 1. Attending | | | | | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | | |
| 4.1. Grading seminar papers | - | | | | | | | | | |
| 4.2. Grading colloquia/ written and oral exam | ι | nsatisfactory | | Sat | isfactory | Above | average | | | |



| | understanding. I terms and concep | memory, without a deeper Does not know or apply basic pts. Does not know how to apply contents of the course with | Reproduces the basic concep difficulty imparts new knowled the material, explains the term supported with examples. | Knowledge is at the level of analysis, synthe- and evaluation. Observes the principle accurately and thoroughly explains the conte- of the material, and logically connects a explains the terms and concepts supported we examples. Finds solutions that were r originally given. Notes correlations with relat- material. | | | |
|-------------------------------|--------------------------------------|--|--|--|-------------|-----------|-------------------|
| | Active course | 70-74,9% of attendance | 75-79,9% of attendance | 80-89,9% of | attendance | 90-10 | 00% of attendance |
| | attendance | 2 points | 5 points | 10 points | | | 20 points |
| | | 2 | 3 | 4 | | | 5 |
| 4.3. Final grade according to | Colloquia/ Written exam | 50-64,9% | 65-79,9% | 80-89,9% | | | 90-100% |
| luation elements | | 25 points | 30 points | 35 points | | | 40 points |
| | Quality | 2 | 3 | 5 | | | 5 |
| | Oral exam | 25 points | 30 points | 35 points | | | 40 points |
| | - | acquired knowledge, skills and ces (teaching + final exam) | Numerical grade | | ECTS grade | | |
| 4.4. Final grade according to | | 90 - 100% | 5 (excellent) | | | А | |
| absolute division | | 80-89,9% | 4 (very good) | | | В | |
| | | 65 – 79,9% | 3 (good) | | | С | |
| | | 60-64,9% | 2 (satisfactory) | | | D | |
| | | 50 - 59,9% | 2 (satisfactory) | | | Е | |
| 5. ADDITIONAL COURSE IN | FORMATION | | | | | | |
| | | Ti | itle | | Number of c | copies in | Availability via |

| 5.1. Compulsory literature | Title | Number of copies in the library | Availability via other media |
|-----------------------------------|--|---------------------------------|---------------------------------|
| (available in the library and via | Jerko Acalin: Information systems and technologies - textbook with PP-presentation, Polytechnic of | 5 | Avaialble on the e- |
| other media) | Šibenik, 2017 | | learning page of the |
| | Jerko Acalin: Basics of Informatics (Windows, Word, Excel, PowerPoint), Polytechnic of Šibenik, 2017 | 5 | course |



| 5.2. Additional literature (at the | Milan Korać: EXCEL 2013 EXCELL 2010 | 5 | | | |
|--|--|---|---|--|--|
| moment of changes and/or | Wayne I. Winston: Excel 2010 Data analiysis and Business Modeling | 2 | | | |
| amended of study programme) | Word 2010 Microsoft Press, A Division of Microsoft Corporation | 2 | - | | |
| amended of study programme) | Marko Russo, Alberto Ferari: Power Pivot for Excell 2010 | 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 teacher | It is the responsibility of each student to be regularly informed about the course, the coursework, and t possible adjournment will be published in a timely manner on the e-learning site of the course and on the teachers during the consultation period (at least one hour per week), while for short questions and expl also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be working days after receiving the e-mail). | website of the Polytechn anations they can be cont | ic. Students can contact tacted during class. It is | | |



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

| 1. GENERAL INFORMATION | . GENERAL INFORMATION ABOUT THE SUBJECT | | | | | | | |
|--|--|---|--|--|--|--|--|--|
| 1.1. Course title | KNOWLEDGE OF GOODS | 1.8. ISVU course code | 187586 | | | | | |
| 1.2. Course lecturer | Nikolina Gaćina, grad. eng., 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes \Box no | | | | | |
| 1.7. Credit score (ECTS) | 4 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | |

| 2. COURSE DESCRIPTION | |
|---|---|
| 2.1. Course objectives | The goal is to provide students with theoretical knowledge and case studies: Defining the basic concepts of the science of knowledge of goods, Understanding the specificity of particular types of goods, their identification, conditions of packaging, transport and storage, and environmental friendliness; Understanding the need and importance of standardization and product quality, Understanding the importance and types of strategic goods, Apply the learned content of this course in business practice. |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF. |
| | LO1: To apply and link professional terms from technologgy and organization of road traffic in written and oral communication with the profesional public in croation and English. |
| 2.3. Learning outcomes on the | LO2: To organize and implement team work and critically judge the opinions and atitudes od team members |
| study programme level | LO3: To individually and responsibly search, interpret and integrate the revevant literature needed to make decisions |
| | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions |
| | LO10: To compare and choose technical and technollogical solutions in treffic and / or traffic logistics |



| | LO13: to track trends in the development of technique, technology and safety in traffic | |
|---------------------------------|--|--|
| | Learning outcomes towards Bloom's taxonomy: (up to two verbs per LO) | LO Level: 1- Recapture, 2- Understanding, 3- Application, 4- Analysis, 5- Evaluation, |
| 2.4. Expected learning outcomes | Demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts of the science of knowledge of goods Categorize and compare the basic concepts of the science of larger the basic concepts. | 6- Synthesis |
| on the course level | Categorize and compare the basic concepts of the science of knowledge of goods Compare and distinguish product types, their identification, labeling, and transportation and storage conditions Categorize and compare types of packaging material | 4, 5, 6 4, 5 4, 5 |
| | 5. Analyze and evaluate the specific characteristics and reasons for the application of particular packaging materials for different products | 4, 5, 6 |
| | 6. Distinguish and compare different processes of food preservation in relation to the longevity and preservation of the nutritional value of the product | 4, 5, 6 |
| | Analyze and anticipate the importance of food and non-food commodities of today and today Present the acquired knowledge, ideas, problems and solutions independently and in a team. | 4, 5 6 |

| | Const | tructive alignment | | | | |
|---|-------|--|------------------|---|--|----------------|
| | No. | Thematic ensemble / Lecture Topic | LO of the course | Content / Teaching Method | Evaluation | Time needed |
| 2.5. Course content according to detailed curriculum schedule | | Introduction to the course and detailed curriculum. Introduction to writing a seminar paper. | - | Listen to the lecture. | - | 2 h |
| | 1. | 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 |



| | | | | | | | - | s substances, to analyze f the same. | the possible | |
|--|-------|-------------------------------------|----------------------------------|---------------------------|-----------------------------------|---|------------------------|---|----------------------------|------|
| | 13. | Transport and disposubstances. | osal of hazardous | 1, 2, 3, 4, 5, 6, 7, 8 | • | lecture, present r, followed by a read literature | they know of hazard | lloquium or the written a w: to define and classify dous substances during the disposal and labeling | the labeling transport, to | 6 h |
| | 14. | Strategic Goods. 2. | Colloquium. | 1, 2, 3, 5, 6, 7, 8 | a seminar pape discussion, and | | they know | lloquium or the written a w: to define and catego explain their importance | rize strategic | 4 h |
| | 15. | Concluding Co Repetition and Exa | nsiderations / m Preparation. | | - | a lecture and dually for the | | | | 20 h |
| 3. EVALUATION OF STUDEN | T WO | RK | | | | | | | | |
| 3. EVALUATION OF STUDENT WORK In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendate Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquy seminar paper. Stude who have during the course achieved: From 0 – 24,9% ECTS credits - is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a region 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 example. | | | | | | er. Students nic year; n a regular he seminar | | | | |
| 3.2. Monitoring student work | Atten | dance (|),25 | Written | exam | 2 (without colloquiums) | | Project | | |
| (enter the share of ECTS credits for each activity so that the total | Exper | imental work | | Researc | h | | | Practical work | | |
| number of ECTS points | Essay | | | Report | | | | Continuous examination | | |



| corresponds to the credit score of the course) | Colloguum | 3 (without the written and oral exams) | Seminar paper | | 0,75 | Other | r (inscribe) | |
|---|---|---|---|--|--|---------------|--|---|
| | Class activities | | Oral exam | | 1 (without colloquiums) | Other | r (inscribe) | |
| | The student's workload or | n all bases amounts to 1 | ECTS point for 30 |) hours o | of work per semester and | is estim | ated as: | |
| | Commitment | | | | Hours (estimate) | | | |
| 3.3. Student workload | 1. Attending class | | | | 45 | | | |
| | • | resenting seminar paper | | | 10 | | | |
| | 3. Preparation for | the Colloquium / exam | through self-study | / | 65 | | | |
| 4. GRADING SYSTEM | | | | | | | | |
| | Valuation Element | Poor | | | Satisfying | | Abo | ve average |
| | Organization | The paper is not organ order and its structure | - | clear introdu | 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 | |
| 4.1. Seminar paper grading | Terminology, writing style | Words and phra harmonized with offic Writing style is m sentences are too vocabulary, and frequ grammatical mistakes | cial terminology. not appropriate, long, modest ent and repeated | officia is appr clear, and ha | 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. | | official termino understanding o writing style is ex- clear and concise | ases are aligned with logy and show an f their meaning. The cellent, the sentences are e, the vocabulary is rich grammatical errors. |
| | Quoting and referencing | Sources are not spec references do not mat show a superficial a research topic. | ch the topic and | with approp | Sources are listed, but incomplete ar with errors. The references at appropriate for the subject and show satisfactory research attitude. | | consistent. The re | curate, complete and ferences are appropriate, and comprehensive and search approach. |
| | Poo | or | | Satisf | fying | Above average | | verage |
| 4.2. Colloquium / exam grading | understanding. Does no | | transfers new k | nowledg | ic terms, without difficulty nowledge, understands subject | | Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and | |
| | apply the basic terms apply or explain the con | * | matter, explains the terms and the notions that substantiate by examples. | | thoroughly explains the content of the subject, and logically links and explains the terms and concepts | | | |



| | | | | ori | t it encapsulates. Find so ginally given. There is relative subjects. | | |
|----------------------------------|---|--|------------------------------------|---------------------------------|---|--------------|--|
| | Active participation | 70 of attendance | 71-80% of attendance | 81-90% of a | ttendance | 91-100% | |
| | in the lessons | 2 points | 3 points | 4 poir | nts | 5 points | |
| | Research paper | 2 | 3 | 4 | | 5 | |
| 4.3. Creating a final grade | Research paper | 8 points | 10 points | 12 poi | nts | 15 points | |
| according to evaluation | | 2 | 3 | 4 | | 5 | |
| elements | Colloquium / written exam | 50-64,9% | 65-79,9% | 80-89, | 9% | 90-100% | |
| | | 25 points | 35 points | 40 poi | nts | 50 points | |
| | Oral mare | 2 | 3 | 5 | 5 | | |
| | Oral exam | 15 points | 20 points | 25 poi | nts | ts 30 points | |
| | - | opted knowledge, skills and (teaching + final exam) | Numerous grade | Numerous grade | | le | |
| 4.4. Creating a final grade | | 90 - 100% | 5 (excellent) | | | | |
| according to absolute allocation | | 80 - 89,9% | 4 (very good) | | B | | |
| C . | | 55 – 79,9% | 3 (good) | | С | | |
| | | 50 – 64,9% 50 – 59,9% | 2 (sufficient) 2 (sufficient) | | D E | | |
| 5. ADDITIONAL INFORMAT | | , | | | | | |
| 5.1. Compulsory literature | | Title | Number of copies in the library | Availability via other media | | | |
| available in the library and | Gacina, N. (2012). Kno | wledge of goods. Internal scrip | t of the Polytechnic of Šibenik, Š | sibenik. | | e-learning | |
| hrough other media) | Lazibat, T. (2004). Kno selected) | wledge of goods and quality ma | 4 | | | | |
| | Andrijanić, I., Balen, M (Chapters selected) | ., Lazibat, T. (2001). Knowledg | e of merchandise in commerce. N | likrorad, Zagreb. | 4 | | |



| mo | 2. Additional literature (at the oment of changes and/or nended of study programme) | Štrumberger, N. (2000). Handling of materials in traffic. Faculty of transport and traffic sciences, University of Zagreb, Zagreb. (Chapters selected) | 4 | |
|-----------|--|--|--|--|
| tha kn | Quality assurance methods at ensure the acquisition of owledge, skills and mpetences | The control of students' work quality and the acquisition of necessary knowledge and skills will be ensure attendance and student activity during classes and provided information on students' progress through she further guidance to students will be provided in order to increase the efficiency of their work. Students will as well as the methods of work and the required literature. Indicators of quality assurance system: Stud Croatian employment service on the annual state of student employment, surveys from employers and Alu | ort colloquiums and hom Il be informed about thei ent survey, monitoring o | nework, information for ir rights and obligations |
| | 4. information on the course d contact with the teacher | It is obligatory for every student to regularly inform about the course, teaching and teaching activities. teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic consultation term (at least one hour per week), while brief questions and explanations can be addressed du mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no e-mail). | ic. Students can contact ring classes. It is possibl | the teachers during the e to ask questions by e- |



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

| 1. GENERAL INFORMATION | ON | | | | | |
|--|--|--|---|--|--|--|
| 1.1. Course title | ENGLISH LANGUAGE I | 1.8. Course code in ISVU | 129833 | | | |
| 1.2. Course lecturer | MSc. Ivana Kardum Goleš, 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 + 15 + 0 + 0) | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | |
| 2. COURSE DESCRIPTION | | | | | | |
| 2.1. 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 | LO1: To apply and link professional terms from to in Croatian and English. | O1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public n Croatian and English. | | | | |
| study programme level | LO2: To organize and implement team work, and | critically judge the opinions and attitudes of team members. | | | | |



| | LO3: 7 | To individually and responsibly sear | rch, interpret a | and integrate the relevant literature ne | eeded to make decisions. | | |
|---|--------|--|------------------|--|--|--|----------------|
| | Lear | ning outcomes accroding to the Blo | oom`s taxono | my: (up to two verbs per LO) | | Level of LO: 1- remembering, 2- understanding 3- application, 4- analysis, 5- evaluation, 6- synthesis | , , |
| | 1 | in written and oral communicat | ion | m the professional terminology of Er | nglish road traffic and use them | 2, 3 | |
| | | to apply grammatical structuresto interpret and use tenses in rea | | - | | 33,4 | |
| | | to develop a shorter essay with | | | | 3,4 | |
| | 5 | 5. to reproduce an email in English | - | | | 3 | |
| | | | | the subjects of the course, to express | one own opinions | 6 | |
| | | to compare and evaluate differeto analyse medium complex tex | | | | 5 | |
| | | b. to use part of the general langua | | | | 6 | |
| | Cons | tructive allignement | | • | | L | |
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | | Time needed |
| .5. Course content according to etailed curriculum schedule | 1. | Introduction into the course and detailed plan. | - | Listen to lectures. Work independently on computer, get to know course content and elearning documents. | - | | 2 h |
| | 2. | Trouble With The Car, Nouns and plurals | 1, 2, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and applied grammatical structures are evaluated, understand, app from the professional termino road traffic and use them in communication verb tenses are | on texts and tasks ly and link terms blogy of English written and oral | 4 h |



| | 1 | | | | | | |
|--|----|----------------------------------|-------------|--------------------------------|--|---|--|
| | | | | | real linguistic context, use part of other language | | |
| | | | | | competences at B1 level. | | |
| | | | | | In colloquium or written and oral exams the | | |
| | | | | | | applied grammatical structures on texts and tasks | |
| | | | | | are evaluated, verb tenses are interpreted in a real | | |
| | | | | | linguistic context, can communicate in foreign | | |
| | | Helen Catches The Train – | | Listen to lectures and read | languages within the course topic, express their | | |
| | 3. | Izražavanje Sadašnjosti (Present | 1, 2, 3, 9 | literature. Use multimedia and | own opinions, present their own ideas related to | 4 h | |
| | 5. | Simple And Continuous) | 1, 2, 3, 9 | internet. Solve exercises. | the development of transport solutions to develop | 4 11 | |
| | | Simple And Continuous) | | | a longer essay within course topics, comparing | | |
| | | | | | and evaluating different solutions in the traffic of | | |
| | | | | | other countries, analyze medium complex texts | | |
| | | | | | and solve tasks, use part of other language | | |
| | | | | | competences at B1 level. | | |
| | | | | | In colloquium or written and oral exams the | | |
| | | | | | applied grammatical structures on texts and tasks | | |
| | | | | | are evaluated, verb tenses are interpreted in a real | | |
| | | | | | linguistic context, can communicate in foreign | | |
| | | | | | languages within the course topic, express their | | |
| | 4 | In The Train – Trouble With The | 1 2 2 0 | Listen to lectures and read | own opinions, present their own ideas related to | 4.1 | |
| | 4. | Car (Present Simple And | 1, 2, 3, 9 | literature. Use multimedia and | the development of transport solutions to develop | 4 h | |
| | | Continuous). | | internet. Solve exercises. | a longer essay within course topics, comparing | | |
| | | | | | and evaluating different solutions in the traffic of | | |
| | | | | | other countries, analyze medium complex texts | | |
| | | | | | and solve tasks, use part of other language | | |
| | | | | | competences at B1 level. | | |
| | | | | | In colloquium or written and oral exams the | | |
| | | | | | applied grammatical structures on texts and tasks | | |
| | | At The Airport And Air | 1 2 2 6 | Listen to lectures and read | are evaluated, verb tenses are interpreted in a real | | |
| | 5. | Pollution Problem (Present | 1, 2, 3, 6, | literature. Use multimedia and | linguistic context, can communicate in foreign | 4 h | |
| | | Tenses) | 9 | internet. Solve exercises. | languages within the course topic, express their | | |
| | | | | | own opinions, present their own ideas related to | | |
| | | | | | the development of transport solutions to develop | | |
| | | | | 1 | 1 | | |



| 8 Meving About Towns – Verb 1, 2, 3, 5, 6, 9 Listen to lectures and read linguistic context, can communicate in foreign 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, 9 Listen to lectures and read linguistic context, can communicate in foreign and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to develop a longer essay within course topic, somparing and evaluating different solutions to texts and tasks are evaluated, were these are interpreted in a real linguistic context, can communicate in foreign 4 h 8. Meving About Towns – Verb 1, 2, 3, 5, 6, 9 Listen to lectures and link part in discustions to develop a longer essay within course topic, comparing and evaluating different solutions in the traffic of the development of transport solutions to develop a longer essay within course topic, comparing and evaluating different solutions in the traffic of the development of transport solutions to develop a longer essay within course topic, comparing and evaluating different solutions in the traffic of the development of transport solutions in the traffic of the development of transport solutions in the traffi | | | | | | |
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| 7. Types of Drivers – Verb Tenses 1. 2. 3. 5. Listen to lectures and read information for the analysis of the development of transport solutions in the traffic of other communications present their own ideas related to the development of transport solutions in the traffic of other communications in the traffic of the development of transport solutions in the traffic of other communications in the traffic of this themases, present the context, can communication in foreign and solve tasks, use part of other language within course topics, comparing and evaluating different solutions in the traffic of the development of transport solutions to develop and solve tasks, use part of other language within course topics, capters their own ideas related to the development of transport solutions in the traffic of other communication in foreign and solve tasks, use part of other language within course topics, capters their own ideas and ways of problem in ongenessary within course topics, capters their own ideas and ways of problem is solving. Brainstorning discussion. Solve exercises. 6 h 8. Moving About Towns – Verb Tenses 1. 2. 3. 5. Listen to lectures and take part in discussion. Write the colloquium or writen and oral exams the applied grammatical structures on texts and takes are evaluated, verb tenses are interpreted in a real inguistic context, can communicate in foreign and evaluating different solutions in the traffic of other | | | | | other countries, analyze medium complex texts | |
| 6. Keeping Drunken Drivers Off The Road – Past And Perfect Tenses 1. 2. 3. 5. 6. 9 Listen to lectures and read literature. Use multimedia and internet. Solve exercises. In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted to movi pides related to the development of transport solutions to develop a longer essay within course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language completences at B1 level. 4 h 7. Types Of Drivers – Verb Tenses 1. 2, 3, 5. 6, 9 Listen to lectures and read literature. During lectures individually research the context of this thematic field by searching data bases, present their own ideas related to the development of transport solutions to develop a longer essay 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 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 topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topic, express their own opinions, present their own ideas related to the development of transport solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language completences at B1 level. 6 h 8 | | | | | and solve tasks, use part of other language | |
| 6. Keeping Drunken Drivers Off The Road – Past And Perfect Tenses 1, 2, 3, 5, 6, 9 Listen to lectures and read internet. Solve exercises. applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topic, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts 4 th 7. Types Of Drivers – Verb Tenses 1, 2, 3, 5, 6, 9 Listen to lectures and read literature. During lectures of this thematic field by searching data bases, present tacquing discussion. Solve exercises. In colloquium or written and oral exams the aplied 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 topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay 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 the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within the course topic, express their own opinions, present their own ideas related to the development of t | | | | | competences at B1 level. | |
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| linguistic context, can communicate in foreign | | Tenses I colloquium | 6, 9 | discussion. Write the colloquium. | - | |
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| | | | | 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. | |
| 9. | Fitness To Drive – Relative Pronouns And Possessivess | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 6 h |
| 10. | Travelling By Tube – Personal And Reflexive Pronouns | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Solve exercises. Discuss. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts 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, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
|-----|--|---------------------------------|---|---|------|
| 12. | About Cars In General – Future Perfect | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| 13. | A City At Sea - Living Under Cover – Future Tenses | 1, 2, 3, 9 | Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of | 4 h |



| 1 | | | | | | |
|----------------------------|--------|---|---------------------------------|---|---|--------------|
| | | | | | other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | |
| | 14. | "Jam Yesterday - Jam Tomorrow"; Passenger Transportation – Tenses Revision, Only Stricker Traffic Rules Can Prevent Accidents – Articles | 1, 2, 3, 6, 9 | Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 6 h |
| | 15. | Revision – II colloquium | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| 3. EVALUATION OF STUDEN | TS` WO | ORK | | | | |
| 3.1. Students` obligations | 70% is | required. Part-time students are rec | juired to atten | d classes at least 50%. The students` a | and Evaluation: for all full-time students attendance acquired knowledge is tested during the course class ss, with particular attention being paid to the stude | ses. Special |

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



| | written part of the outcomes are: essa oneself about the c | valuation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the ritten part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning atcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform neself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Polytechnic of Šibenik | | | | | |
|---|--|---|---------------|-----------------------|---------------------------|-------------------------------------|--|
| | Attendance | page of the course, where all t $0,5$ | Written exam | 1 (without colloquia) | Project | t of literature are also available. | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | Practical work | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | Continuous examination | | |
| corresponds to the credit score of the course) | Colloquium | 1 (without written exam) | Seminar paper | | Other | | |
| | Class activity | 0,5 | Oral exam | 1 | Other | | |
| 3.3. Student workload | 1. Attending | on all bases for 1 ECTS credit g classes and exercises 45 hour g colloquia or exams through in | S | | , | | |
| 4. GRADING SYSTEM | | | | | | | |

| 4.1. Grading seminar papers | - | | | | | |
|---|--|---|---------------------------------|--|--|---|
| | Unsatisfact | tory | | Satisfactory | Above a | verage |
| 4.2. Grading colloquia/ written and oral exam | Responds by memory, we understanding. Does not basic terms and conce know how to apply contents of the course we we have a set of the course w | t know or apply epts. Does not or explain the | difficulty in understands th | e basic concepts and without mparts new knowledge, e material, explains the terms upported with examples. | Knowledge is at the level evaluation. Observes the princip explains the content of the ma and explains the terms and conce Finds solutions that were a correlations with related materi | bles, accurately and thoroughly aterial, and logically connects cepts supported with examples. not originally given. Notes |
| 4.3. Final grade according to | Active course attendance | | attendance oints | 76-86% of attendance 7 points | 87-100% of attendance 20 points | Maksimum bodova 20 bodova |
| evaluation elements | Seminar paper | 5 pc | 51115 | / points | 20 points | 20 00000 |



| | | 2 | 3 | 4 | 5 | |
|---|----------------------------|---|------------------|-----------|------------|--|
| | Colloquia/ Written exam | 50-64,9% | 65-79,9% | 80-89,9% | 90-100% | |
| | Cram | 25 points | 30 points | 35 points | 40 bodova | |
| | Oral exam | 2 | | 4 | 5 | |
| | 25 points | | 30 points | 35 points | 40 bodova | |
| | | Percentage of acquired knowledge, skills and competences (teaching + final exam) | | I | ECTS grade | |
| | Ģ | 90 - 100% | | | А | |
| 4.3. Final grade according to absolute division | 8 | 80-89,9% | 4 (very good) | | В | |
| | 65 - 79,9% | | 3 (good) | | С | |
| | 6 | 60 - 64,9% | | | D | |
| | 5 | 50 - 59,9% | 2 (satisfactory) | | E | |

5. ADDITIONAL COURSE INFORMATION

| 5.1. Compulsory literature | Title | Number of copies in the library | Availability via other media |
|---|---|------------------------------------|---------------------------------|
| (available in the library and via other media) | Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters) | 10 | Х |
| 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 (elearning, 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 attendance and student activity during classes and provided information on students` progress through shor further guidance to students will be provided in order to increase the efficiency of their work. Students will | t colloquiums and home | work, information for |



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



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

| 1. GENERAL INFORMATION | | | | | | | |
|--|--|---|--|--|--|--|--|
| 1.1. Course title | MODERN TRAFFIC SYSTEMS | 1.8. Course code at ISVU | 129846 | | | | |
| 1.2. Course lecturer | MSc. Martina Ljubić Hinić, senior lecturer | 1.9. Course code at MOZVAG | | | | | |
| 1.3. Assistants and/or associates | Ana-Mari Poljičak, grad. eng. traff., senior lecturer | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 0 + 15 + 0) | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of 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 | X yes \Box no | | | | |
| 1.7. Credit point (ECTS) | 6 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20% X More than 20 % □ | | | | |

| 2. COURSE DESCRIPTION | |
|---|---|
| 2.1. Course objectives | The aim is to provide students with theoretical knowledge and case studies: define elements and branches of the transport system; learn the elements of the transport system; understand the technical and technological characteristics of the traffic branches; acquire knowledge about the organizational features of the traffic branches and the complexity of the transport system; get to know the interdisciplinary approach to the transport system and transport processes; apply the learned content of this course to practice. |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF |
| 2.3. Learning outcomes on the | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. |
| study programme level | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. |
| | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. |



| | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | | | | | | |
|--|--|---|--|--|--|--|--|--|--|
| 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 enumerate and explain the elements and branches of the transport system | 1, 2 | | | | | | | |
| | 2. to demonstrate knowledge and understanding of course content by defining and describing an interdisciplinary approach to the transport system | 1, 2 | | | | | | | |
| | 3. to describe, compare and relate the technical and technological characteristics of the branches of transport and modern transportation technologies | 2, 4 | | | | | | | |
| | 4. to identify and evaluate the interdependence of the elements of the transport system | 1, 6, 5 | | | | | | | |
| | 5. to use materials and tools to search scientific and professional literature in their native and English languages | 3 | | | | | | | |
| | 6. to present the acquired knowledge, ideas, problems and solutions independently and in a team | | | | | | | | |

| | Constructive alignment | | | | | | | | |
|---|------------------------|---|------------------|---|---|----------------|--|--|--|
| 2.5. Course content according to detailed curriculum schedule | 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 | | | |
| | 1. | Elements of the transport system. Historical development of traffic. | 1, 2, 4 | Listen to lectures and read literature. | In colloquium or the written and oral exam they define the system and elements of the transport system and explain the interdisciplinary nature of the transport system, and state the historical | 3 h | | | |



| 1 | | | | | | | |
|---|----|--|-------------|---|---|------|--|
| | | | | | development of the elements and | | |
| | | | | | branches of the transport system. | | |
| | | | | They listen to a lecture and read literature. | In colloquium or the written and oral | | |
| | | | | In the course of the seminar, they | exam they identify and explain the | | |
| | | | | individually explore the content of this | elements and technologies of maritime | | |
| 2 | 2. | Maritime traffic. | 1, 2, 3, 5 | topic area by searching the database, and on | transport, and define and describe the role | 4 h | |
| | | | | the basis of it and the read literature, come | of technical and technological | | |
| | | | | up with their own ideas, and ways to solve | characteristics of maritime transport in | | |
| | | | | problems. | the transport system. | | |
| | | | | They listen to a lecture and read literature. | In colloquium or written and oral exams | | |
| | | | | In the course of the seminar, they | they specify and explain the elements and | | |
| | | | | individually explore the content of this | technologies of inland waterway | | |
| 3 | 3. | Inland waterways. | 1, 2, 3, 5 | topic area by searching the database, and on | transport, and define and describe the role | 4 h | |
| | | | | the basis of it and the read literature, come | of technical and technological | | |
| | | | | up with their own ideas, and ways to solve | characteristics of maritime transport in | | |
| | | | | problems. | the transport system. | | |
| | | | | They listen to a lecture and read literature. | In colloquium or written and oral exams | | |
| | | Seaports. Transportation technologies. | | In the course of the seminar, they | they identify and explain the types and | | |
| | | | 1, 2, 3, 4, | individually explore the content of this | operation of seaports, and define, list and | | |
| 4 | 4. | | 5, 6 | topic area by searching the database, and on | describe transportation technologies and | 4 h | |
| | | | | the basis of it and the read literature, come | explain the interdependence of all | | |
| | | | | up with their own ideas, and ways to solve | branches of transport. Seminar work is | | |
| | | | | problems. | done in groups with discussion. | | |
| | | | | | In colloquium or written and oral exams | | |
| | | | | | they identify and explain seaports, and | | |
| 5 | 5 | Study trip (Rijeka port). | 1, 2, 3, 4, | They listen to a lecture. | define and describe the role of seaports as | 8 h | |
| | 5. | Study unp (rujeku port). | 5,6 | They listen to a feetare. | collection points into which traffic flows | 0 11 | |
| | | | | | from all traffic routes and means of | | |
| | | | | | transport of different branches of traffic. | | |
| | | | | They listen to a lecture and read literature. | In colloquium or written and oral exams | | |
| 6 | 6. | Road traffic. 1, 2, 3, 4 5, 6 5, 6 | 1, 2, 3, 4, | In the course of the seminar, they | they specify and explain the elements and | 4 h | |
| | | | 5,6 | individually explore the content of this | technologies of road transport, and define | | |
| | | | | topic area by searching the database, and on | and describe the role of technical and | | |



| | | | | the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | technological characteristics of road transport in the transport system. Seminar work is done in groups with discussion. | |
|---|-----|---------------------------------|---------------------|---|--|------|
| 7 | 7. | Road traffic. | 1, 2, 3, 4, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they specify and explain the elements and technologies of road transport, and define and describe the role of technical and technological characteristics of road transport in the transport system. Seminar work is done in groups with discussion. | 4 h |
| 8 | 3. | Rail traffic. 1st Colloquium | 1, 2, 3, 4, 5, 6 | They listen to a lecture and prepare individually for the colloquium. | In colloquium or written and oral exams they specify and explain the elements and technologies of railway transport, and to define and describe the role of technical and technological characteristics of railway transport in the transport system. Seminar work in groups is prepared with discussion. | 42 h |
| 9 |). | Rail traffic. | 1, 2, 3, 4, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they specify and explain the elements and technologies of railway transport, and to define and describe the role of technical and technological characteristics of railway transport in the transport system. Seminar work in groups is prepared with discussion. | 4 h |
| 1 | 10. | Air traffic. | 1, 2, 3, 4, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come | In colloquium or written and oral exams they specify and explain the elements and technologies of air traffic, and define and describe the role of technical and technological characteristics of air traffic | 4 h |



| 1 | | | | | | |
|---|-----|--|---------------------|---|---|------|
| | | | | up with their own ideas, and ways to solve problems. | in the transport system. Seminar work is done in groups with discussion. | |
| | 11. | Postal traffic. | 1, 2, 3, 4, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they specify and explain the elements and technologies of postal traffic, and define and describe the role of technical and technological characteristics of postal traffic in the transport system. Seminar work is done in groups with discussion. | 4 h |
| | 12. | Telecommunication traffic. | 1, 2, 3, 4, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they specify and explain the elements and technologies of telecommunication traffic, and define and describe the role of technical and technological characteristics of telecommunications traffic in the transport system. Seminar work is done in groups with discussion. | 4 h |
| | 13. | Pipeline transport. Cable car transport. | 1, 2, 3, 4, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they specify and explain the elements and technologies of pipeline and cableway traffic, and define and describe the role of technical and technological characteristics of pipeline and cableway traffic in the transport system. Seminar work is done in groups with discussion. | 4 h |
| | 14. | City traffic. Taxi traffic. 2nd Colloquium. | 1, 2, 3,4, 5, 6 | They listen to a lecture and prepare individually for the colloquium. | In colloquium or written and oral exams they identify and explain the elements and technologies of urban transport, and define and describe the role of urban transport in the transport system. | 42 h |
| | 15. | Concluding considerations. | 6,7 | They listen to a lecture and prepare individually for the exam. | - | 44 h |



| | Repeatin for the ex | | | | | | | |
|---|---|---|--|---|--|--|--|---|
| 3. EVALUATION OF STUDEN | | Kam. | | | | | | |
| 3.1. Students` obligations | Part-time student have achieved du • From 0 • From 2 extraordi • More th Writing a semina | s are required to atter ring the course: - 24.9% of ECTS cre 5-49.9% - are assesse nary exam period; nan 50% - students ha r paper is a prerequis | nd a class of edits - they a ed by FX (ins ave the right site for obtain | at least 50%. All re rated F (unsucc sufficient) and mu- to take the final ex ning a signature. S | ent Assessment and Evaluation students must create, present essful) and cannot earn ECTS st pass and pass the written ex cam. Students can take the final ex ation in classes and two exam | and positively colloquy credits and must re-enro cam (test). Written exam am in the course in two | seminar paper. Stu oll in the next acade (test) can be held in ways: a) during th | udents who emic year; n regular or e course of |
| | | ritten and oral part of | the exam). | ritten exam | 1 (without colloquia) | Project | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | - | | search | | Practical work | | |
| for each activity so that the total number of ECTS points | Essay | | Re | port | | Continuous examination | 1 | |
| corresponds to the credit score of the course) | Colloquium | 1 (without written exam) | n Sei | minar paper | 1 | Other | | |
| | Class activity | 1 | Or | al exam | 1 | Other | | |
| 3.3. Student workload | | on all bases is 1 EC e midterm exam 120 | | semester hours an | nd is estimated as: Attendance | e 45 h, Design of semina | r work and present | tation 15 h, |
| 4. GRADING SYSTEM | | | | | | | | |



| | Element of evaluation | Bad | | | Satisfying | | Above average | |
|--|---|---|---|---|------------------------|---|--|--|
| | Organization | The paper is not organ order and lacks structur | - | the main body of the text and the conclusion | | duction, and the con | e paper is well structured with a clear stinction between the introduction, e main body of the text and the nclusion, which are logically erconnected. | |
| 4.1. Grading of seminar work | Terminology, writing style | Words and expressions low in line with official terminology. The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors. | | Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors. | | ine with off ng style unu icture is wr iate and are rs. ric | 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 1 references do not fit th a cursory approach t topic. | | topic and show and with errors. The references at | | ces are are show a con | and consistently listed. The references | | |
| | Bad | | | Satisfying | | | Above average | |
| 4.2. Grading of the colloguium / written and oral exam | It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples. | | difficulty impar the material, exp | It reproduces the basic concepts and w difficulty imparts new knowledge, unders the material, explains the terms and concep it supports with examples. | | ds of the material, and logically connects an | | |
| | Active 7 | 0-75% of the presence | 76-86% of t | he presence | 87-100% of | the presence | Case studies resolved | |
| 4.3. Forming the final grade | attendance | 0 points | 0 pc | | 0 pc | | 0 points | |
| according to the evaluation | Seminar paper | 2 | | 3 4 | | | 5 | |
| elements | N | Ade and handed over | Made and handed over | | Made and handed over | | Made and handed over | |
| | | 2 | | 5 | 2 | ŀ | 5 | |



| | Examination / | 50-64% | 65-80% | 81-90 | 0% | 91-100% | |
|---|---|---|------------------------------------|------------------------------|---------------------|-----------------------|--|
| | Written examination | 25-32 points | 33-40 points | 41-45 p | oints | 46-50 points | |
| | Oral part of the | 2 | 3 | 5 | | 5 | |
| | exam | 25-32 points | 33-40 points | 41-45 p | oints | 46-50 points | |
| | - | of acquired knowledge, skills an tences (teaching + final exam) | d Number ratin | g | ECTS gra | ıde | |
| | 1 | 90-100% | 5 (excellent) | 6 | А | | |
| 4.4. Formation of final grade | | 80-89,9% | 4 (very good |) | В | | |
| based on absolute distribution | | 65 - 79,9% | 3 (good) | | С | | |
| | | 60-64,9% | 2 (sufficient) |) | D | | |
| | | 50-59,9% | 2 (sufficient) |) | E | | |
| 5. ADDITIONAL INFORMATI | ION ON THE SUB. | ЕСТ | | | Number of conics in | Amilability via other | |
| 5.1. Required literature | | Tit | Number of copies in the library | Availability via other media | | | |
| (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) | Zelenika, R.: Multi | | | | 3 0 0 | No No Yes | |
| 5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences | students' attendance needed for further working methods a | Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of tudents' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information eeded for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as yorking methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment tatus of students, employer survey and Alumni Association. | | | | | |



| | | It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or |
|-----|------------------------------|---|
| 5 / | . Informing about the course | possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact |
| | d contacting the teacher | 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 |
| and | i contacting the teacher | 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.

| 1.1. Course title lecturer | | 1.8. Course code in ISVU | |
|--|---|---|---|
| 1.1. Course the fecturer | BASICS OF ELECTRICAL ENGINEERING AND ELECTRONICS | | 187598 |
| 1.2. Course lecturer title | MSc. Danijel Mileta, 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no |
| 1.7. Credit score (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 % |
| 2. COURSE DESCRIPTION | V | | |
| 2.1. Course objectives | The main objective of the course is to familiarize students | s with basic knowledge in the field of electrical engineering a | nd 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 | IU4: Apply knowledge of natural and technical sciences t | o road transport problems. | |
| study programme level | IU8: Solve traffic problems using analytical and / or graph | hical methods. | |
| | Learning outcomes by Bloom: (maximum 2 werbs for L | 0) | Level of LO: |
| 2.4. Expected learning | | | 1- memory, |
| outcomes on the course level (4- | | | 2- understanding, |
| 10 learning outcomes) | | | 3- application, |
| | | | 4- analysis, |
| | | | 5- evaluation, |
| | | | 6- synthesis. |



| | 1 | . Set and calculate basic equations of | of simple circu | uits and magnetic circuits. | | 3 | |
|---|------|---|------------------|--|--------------------|--|--------|
| | 2 | Draw or sketch schematics of basi | c electrical de | evices | | 4, 3 | |
| | 3 | . Identify and compare electrical an | d magnetic pł | nenomena. | | 2,4 | |
| | 4 | . Describe electronic components a | nd basic electi | rical devices. | | 1 | |
| | 5 | . Predict the results of electrical and | l magnetic int | eractions | | 5 | |
| | 6 | Solve simple tasks in the field of ϵ | electrostatics a | and electromagnetism. | | 3 | |
| 2.5. Course content according to detailed curriculum schedule | Cons | tructive allignement | | | | | |
| | No | Thematic unit | LO of the | Content/teaching methods | Eva | luation | Time |
| | | | course | | | | 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 | | | 2 h |
| | | detaned curriculum. | - | documents on the e-learning course page. | | - | 2 11 |
| | 2. | Basics of electricity | | Students listen to a lecture and read literature. | At the colloquiu | m, written and oral | |
| | | 5 | | The exercises demonstrate how to solve | - | define and describe | |
| | | | | tasks. Independent task solving. | basic concepts | and identify causes | |
| | | | 3, 5 | | - | of electricity, draw | 6 h |
| | | | | | | same, and solve or | |
| | | | | | - | tasks in the field of | |
| | 2 | Electric and end end | | Students listen to a lecture and read literature. | electricity. | ···· ·····:::::::::::::::::::::::::::: | |
| | 3. | Electric current and associated phenomena | | The exercises demonstrate how to solve | - | im, written and oral define and describe | |
| | | phenomena | | tasks. Independent task solving. | • | identify the basic | |
| | | | 1, 3, 5 | usks. Independent tusk solving. | - | direct current and | 4 h |
| | | | 1,0,0 | | - | ena, draw or sketch | |
| | | | | | - | simple tasks in the | |
| | | | | | field of direct cu | irrent. | |
| | 4. | Simple DC circuits | | Students listen to a lecture and read literature. | - | im, written and oral | |
| | | | | The exercises demonstrate how to solve | • | define and describe | |
| | | | 1, 2, 3, 5 | tasks. Independent task solving. | | pts, the behavior of | 4 h |
| | | | | | | mple DC circuits, | |
| | | | | | draw or sketch the | he 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 |



| Image: space | | | | | | |
|--|-----|---------------------------|---------------|----------------------------------|--------------|-----|
| 10. Electromagnetism 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 encerpts of phenomena, draw and skitch them, and solve or calculate simple tasks in the field. 11. Transformer 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 them mole of operation of the transformer and the field. 12. AC generator 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 mole of operation of the transformer and the field. 12. AC generator 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 transformer, and the field. 13. Electromotor 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, draw or sketch the principle of operation of electric motors and solve or calculate simple tasks in the field. 14. Basic electronic elements 2, 4 Students listen to a lecture and read literature. The exercises demonstrate how to solv | | | | | _ | |
| Image: Constraint of the service of the solution of the principle of operation of the principle | 10 | | | | | |
| 1.2.3,4.5 tasks. Independent task solving. the basic concepts of electromagnetism, identify related phenomena, draw and sketch ther mode of electromagnetism, identify related phenomena, draw and sketch ther mode of operation of the transformer and read literature. 9 h 11. Transformer 1, 2, 3, 4, 5 Students listen to a lecture and read literature. The exercises demonstrate how to solve or calculate simple tasks in the field. 9 h 12. AC generator 1, 2, 3, 4, 5 Students listen to a lecture and read literature. The exercises demonstrate how to solve or calculate simple tasks in the field. At the colloquium, written and oral exam they can define, describe, draw or sketch 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 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 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 operation of the transmet is a solving. 4 h 15. Repetition / Colloquium 1, 2, 3, 4, 5 Students listen to a lecture and read literature. The exercises demonstrate how to solve solve sinple tasks from the satic | 10. | Electromagnetism | | | · · | |
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| tasks. Independent task solving. units 10-13. | | | 1, 2, 3, 4, 5 | | - | 4 h |
| | | | | tasks. Independent task solving. | units 10-13. | |



| 4. EVALUATION OF ST | UDENT WORK | | | | | |
|---|---|---|---|---|---|--|
| 3.1. Student obligations | Part-time students are re | Rulebook on Study and the Rulebo equired to attend a class of at least not earn ECTS credits, and must re | 50%. Students who have a | chieved during the co | urse: from 0 - 24,9% EC | CTS credits- are rated F |
| | to take the final exam. | n exam (test). Written exam (test) Students can take the final exam fination in classes and through two e | om the course in two ways | s: a) during the course | of teaching through con | - |
| 3.2. Student work monitoring | Attending classes | 1 | Written exam | 1 | Project | |
| (enter the share of ECTS credits for each activity so that the total | Experimental work | | Research | | Practical work | |
| number of ECTS credits | Esaay | | Report | | Continuous check | |
| corresponds to the course credit | Colloquiums | 1 | Seminar paper | | (other) | |
| value) | Teaching activities | | The oral part of exam | 1 | (other) | |
| 3.3. Student work-load4. GRADING SYSTEM | | | | | | |
| | | | | | | |
| 4.1. Evaluation of seminar paper | Elements of evaluation | Bad | Satisfy | ing | Above | average |
| 4.1. Evaluation of seminar paper | | Bad The paper is not organized in a | Satisfy The paper is well stru | | The paper is well st | tructured with a clear |
| 4.1. Evaluation of seminar paper | evaluation | | The paper is well stru distinction between the in | ctured with a clear ntroduction, the main | The paper is well st distinction between | tructured with a clear the introduction, the |
| 4.1. Evaluation of seminar paper | evaluation | The paper is not organized in a | The paper is well stru | ctured with a clear ntroduction, the main | The paper is well st distinction between | tructured with a clear the introduction, the xt and the conclusion, |
| 4.1. Evaluation of seminar paper | evaluation | The paper is not organized in a | The paper is well stru distinction between the in | actured with a clear ntroduction, the main conclusion. | The paper is well st distinction between main body of the tex which are logically int | tructured with a clear the introduction, the xt and the conclusion, |
| 4.1. Evaluation of seminar paper | evaluation Organization | The paper is not organized in a logical order and lacks structure. Words and expressions are not in line with official terminology. | The paper is well stru distinction between the in body of the text and the Words and expression official terminology. T | ctured with a clear ntroduction, the main conclusion. s are in line with 'he writing style is | The paper is well st distinction between main body of the tex which are logically int Words and expression official terminology | tructured with a clear the introduction, the xt and the conclusion, terconnected. ons are aligned with y and show an |
| 4.1. Evaluation of seminar paper | evaluation Organization Terminology, writing | The paper is not organized in a logical order and lacks structure. Words and expressions are not in line with official terminology. The writing style is not | The paper is well stru distinction between the in body of the text and the Words and expression official terminology. T appropriate, the sentence | s are in line with the writing style is the structure is clear, | The paper is well st distinction between main body of the tex which are logically int Words and expression official terminology understanding of their | tructured with a clear the introduction, the xt and the conclusion, terconnected. ons are aligned with y and show an r meaning. The writing |
| 4.1. Evaluation of seminar paper | evaluation Organization Terminology, writing | The paper is not organized in a logical order and lacks structure. Words and expressions are not in line with official terminology. The writing style is not appropriate, the sentences are | The paper is well stru distinction between the in body of the text and the Words and expression official terminology. T appropriate, the sentence the vocabulary is appropriate | s are in line with the writing style is the structure is clear, | The paper is well st distinction between main body of the tex which are logically int Words and expression official terminology understanding of their style is excellent, the st | tructured with a clear the introduction, the st and the conclusion, terconnected. ons are aligned with y and show an r meaning. The writing sentences are clear and |
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| 4.1. Evaluation of seminar paper | evaluation Organization Terminology, writing | The paper is not organized in a logical order and lacks structure. 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 | The paper is well stru distinction between the in body of the text and the Words and expression official terminology. T appropriate, the sentence the vocabulary is appropriate | s are in line with the writing style is the structure is clear, opriate and there are | The paper is well st distinction between main body of the tex which are logically int Words and expression official terminology understanding of their style is excellent, the s concise, the vocabular no grammatical errors | tructured with a clear the introduction, the xt and the conclusion, terconnected. ons are aligned with y and show an r meaning. The writing sentences are clear and ry is rich and there are |
| 4.1. Evaluation of seminar paper | evaluation Organization Terminology, writing style | The paper is not organized in a logical order and lacks structure. 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. | The paper is well stru distinction between the in body of the text and the Words and expression official terminology. T appropriate, the sentence the vocabulary is appro- few grammatical errors. | cctured with a clear ntroduction, the main conclusion. s are in line with 'he writing style is ce structure is clear, opriate and there are but incomplete and | The paper is well st distinction between main body of the tex which are logically int Words and expression official terminology understanding of their style is excellent, the concise, the vocabular no grammatical errors The sources are accur consistently listed. | tructured with a clear the introduction, the st and the conclusion, terconnected. ons are aligned with y and show an r meaning. The writing sentences are clear and ry is rich and there are s. |



| | | topic and show a cursory approach to exploring the topic. | topic and show a sati attitude. | isfactory research | comprehensive and approach. | shows a detailed research |
|---|--|--|---|-------------------------------------|---|---|
| 4.2. Gradeing of the colloquium/written and oral | | Bad | Satisfyin | - | | ve average |
| exam | It does not know or appl | , without a deeper understanding. y basic terms and concepts. It does y or explain the contents of the | It reproduces the basic con difficulty imparts n understands the material, and concepts that it suppor | ew knowledge, explains the terms | synthesis, and eva legality, accurately the content of the connects and expla that it supports solutions that were | the level of analysis, aluation. It observes the and thoroughly explains e material, and logically ins the terms and concepts with examples. Finds e not originally given. It with related material. |
| 4.3. Forming the final grade | Active attendance on | 0-69,9% attendance | 70-79,9% attendance | 80-89,9% | attendance | 90-100% attendance |
| according to the evaluation elements | class | 0 points | 5 points | 7 points | | 10 points |
| ciements | 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 |
| | | 2 | 3 | | 4 | 5 |
| | Oral part of exam | 15 points | 20 points | 25 | points | 30 points |
| 4.4. Formation of the final grade based on the absolute | Percentage of acquired knowledge, skills and competencies (teaching + final exam) | | Numerical grade | | ECTS grade | |
| distribution | | 90 - 100% | 5 (exceller | nt) | | А |
| | | 80 - 89,9% | 4 (very goo | (bc | | В |
| | | 55 – 79,9% | 3 (good) |) | | С |
| | | 60 - 64,9% | 2 (sufficie | nt) | | D |
| | | 50 - 59,9% | 2 (sufficie | nt) | | Е |



| 5. ADDITIONAL INFORMATI | 5. ADDITIONAL INFORMATION ABOUT COURSE | | | | | | | |
|------------------------------------|--|-------------------------------------|-------------------------------|--|--|--|--|--|
| 5.1. Compulsory literature | Title | Number of copies in the | Availability via other | | | | | |
| (available in the library and via | | library | media | | | | | |
| other media) | Stanić, E.: "Basics of electrical engineering", School book, Zagreb | 3 | | | | | | |
| 5.2. Additional literature (at the | Kulišić, P. : "Physics 2", School book, Zagreb | | | | | | | |
| moment of changes and/or | Pinter, V. : "Basics of electrical engineering 1 and 2", Technical book, Zagreb | | | | | | | |
| amended of study programme) | | | | | | | | |
| 5.3. Quality assurance methods | The control of students' work quality and the acquisition of necessary knowledge and skills will be | e ensured through interactive v | vork. By keeping track of | | | | | |
| that ensure the acquisition of | attendance and student activity during classes and provided information on students` progress three | ough short colloquiums and he | omework, information for | | | | | |
| knowledge, skills and | further guidance to students will be provided in order to increase the efficiency of their work. Stud | lents will be informed about th | eir rights and obligations | | | | | |
| competences | as well as the methods of work and the required literature. Indicators of quality assurance system | n: Student survey, monitoring | g 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 | It is the responsibility of each student to be regularly informed about the course, the coursework, ar | nd classroom activities. All not | ices of classes or possible | | | | | |
| and contacting the course | adjournment will be published in a timely manner on the e-learning site of the course and on the w | be website of the Polytechnic. Stud | lents can contact teachers | | | | | |
| lecturer | during the consultation period (at least one hour per week), while for short questions and explanation | ons they can be contacted durir | ng class. It is also possible | | | | | |
| | to ask questions by e-mail (from the official e-mail address name@vus.hr), which will be answer | ed as soon as possible (no late | er 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.

| 1.1. Course title | TRAFFIC LOGISTIC | 1.8. Course code in ISVU | 140773 | | | | |
|--|---|---|--|--|--|--|--|
| 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | | |
| 1.7. Credit score (ECTS) | 4 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | |
| 2. COURSE DESCRIPTION | J | | | | | | |
| 2.1. Course objectives | | nowledge and case studies: learn about the elements of the logis rage, transportation, and traffic, mastering the modern logistics | | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification | n level 4.2 according to the CROQF | | | | | |
| 2.3. Learning outcomes on the study programme level | LO1: To apply and link professional terms from technol in Croatian and English. | logy and organization of road traffic in written and oral commun | nication with the professional publ | | | | |
| | LO2: To organize and implement team work, and critic | ally judge the opinions and attitudes of team members. | | | | | |
| | LO3: To individually and responsibly search, interpret | and integrate the relevant literature needed to make decisions. | | | | | |
| | LO5: To apply basic legal and economic principles in o | organization with socially responsible management in technical | -technological subjects. | | | | |
| | LO6: To analyze and present relevant facts from the field | eld of traffic needed to reach conclusions. | | | | | |
| | LO9: To assess and organize processes in the area of road traffic and/or traffic logistics. | | | | | | |
| | LO11: To identify, predict and propose solutions in road traffic technology and technique. | | | | | | |
| | LO12: To set up a minor traffic process and critically evaluate it. | | | | | | |



| Lear | ning outcomes by Bloom: (maximum | a 2 werbs for L | .0) | | Level of LO: | | | | |
|--|---|---|--|---|---|---|--|--|--|
| | | | Learning outcomes by Bloom: (maximum 2 werbs for LO) | | | | | | |
| | | | | | 1- memory, | | | | |
| | | | | | 2- understanding, | | | | |
| | | | | | 3- application, | | | | |
| | | | | | 4- analysis, | | | | |
| | | 5- evaluation, | | | | | | | |
| | | | | | 6- synthesis. | | | | |
| 1 | . Define and differentiate basic tern | ns and division | n in logistics, warehousing, and freight forwardin | ng. | 1, 2 | | | | |
| 2 | 2. Analyze and extract information a | nd communic | ation technologies in transport logistics. | | 4, 2 | | | | |
| 3 | 3. Select, evaluate and categorize ser | rvices in the w | arehouse business. | | 3, 5 | | | | |
| 4 | Compare and connect ways of tra logistics. | ansportation of | f products, organization of distribution and perf | formance of city | 4, 6 | | | | |
| 5. Propose ways of doing urban logistics, handling of products and reduction of inventory costs. | | | | | 6 | | | | |
| 6. Use materials and tools to search the scientific and professional literature in their native and English languages. | | | | | | | | | |
| 7 | 7. Present the acquired knowledge, in | deas, problem | s, and solutions independently and in a team. | | 6 | | | | |
| Cons | tructive allignement | | | | | | | | |
| NT | | | | . | 1 4 | 75 * | | | |
| No | Thematic unit | LO of the course | Content/teaching methods | Eva | luation | 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, 6, 7 | They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that | oral exam, stud define and concepts in le | lents know how to distinguish basic ogistics, types of | 4 h | | | |
| | 2 3 4 5 6 7 Cons No 1. | 2. Analyze and extract information a 3. Select, evaluate and categorize set 4. Compare and connect ways of tradingistics. 5. Propose ways of doing urban logistics. 6. Use materials and tools to search to the course and the second search to the course content and obligations) 2. The term of logistics (term, developmental factors, elements of the logistics system, logistics | Analyze and extract information and communication of a select, evaluate and categorize services in the work. Select, evaluate and categorize services in the work. Compare and connect ways of transportation of logistics. Propose ways of doing urban logistics, handling Use materials and tools to search the scientific at the acquired knowledge, ideas, problems Constructive allignement No Thematic unit LO of the course content and obligations) - Introductory presentation (introducing students to the course content and obligations) - The term of logistics (term, developmental factors, elements of the logistics system, logistics | Analyze and extract information and communication technologies in transport logistics. Select, evaluate and categorize services in the warehouse business. Compare and connect ways of transportation of products, organization of distribution and perflogistics. Propose ways of doing urban logistics, handling of products and reduction of inventory costs. Use materials and tools to search the scientific and professional literature in their native and Eng Present the acquired knowledge, ideas, problems, and solutions independently and in a team. Constructive allignement Introductory presentation (introducing students to the course content and obligations) Interm of logistics (term, developmental factors, elements of the logistics system, logistics system, logistics system, logistics system, logistics system, logistics | 2. Analyze and extract information and communication technologies in transport logistics. 3. Select, evaluate and categorize services in the warehouse business. 4. Compare and connect ways of transportation of products, organization of distribution and performance of city logistics. 5. Propose ways of doing urban logistics, handling of products and reduction of inventory costs. 6. Use materials and tools to search the scientific and professional literature in their native and English languages. 7. Present the acquired knowledge, ideas, problems, and solutions independently and in a team. Constructive allignement Voor Thematic unit I. Introductory presentation (introducing students to the course content and obligations) - Content/teaching methods Eva content and documents on the e-learning page of the course by working independently on a computer. 2. The term of logistics (term, developmental factors, elements of the logistics system, logistics system, logistics system, logistics system, logistics 1, 6, 7 They listen to a lecture and read literature. At logistic and concepts in 1 logistics, fact the seminar class, they individually explore the concept of the logistics of it and reading the literature, create a seminar paper that It is part of the logistics of it and reading logistics, fact the seminar class, fact of the logistics, fact of the logistics of the logistics of the logistics of the logistics, fact of the logistics of the logistic | 6- synthesis. 1. Define and differentiate basic terms and division in logistics, warehousing, and freight forwarding. 1, 2 2. Analyze and extract information and communication technologies in transport logistics. 4, 2 3. Select, evaluate and categorize services in the warehouse business. 3, 5 4. Compare and connect ways of transportation of products, organization of distribution and performance of city logistics. 4, 6 5. Propose ways of doing urban logistics, handling of products and reduction of inventory costs. 6 6. Use materials and tools to search the scientific and professional literature in their native and English languages. 3 7. Present the acquired knowledge, ideas, problems, and solutions independently and in a team. 6 Constructive allignement Listening to the lecture. In the course of (introducing students to the course content and obligations) 1. Introductory presentation (introducing students to the course content and obligations) 1. Seminar, they are introduced to the course of seminars, they are introduced to the course of the logistics (term, developmental factors, elements of the logistics (term, developmental factors, elements of the logistics asystem, logistics system, logistics is system, logistics is system, logistics 1. Net all the colloquium or the written and the seminar class, they individually explore the concepts in logistics, types o | | | |



| 1 | | | | | | |
|---|----|---|------------|--|---|-----|
| | | | | presents the acquired knowledge and presents their own ideas, and ways to solve problems. | and presented (by computer programs). | |
| | 3. | Human resources in logistics (management, freight forwarders, FIATA documents, customs officers). | 1, 6, 7 | They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or the written and oral exam, students know how to define and distinguish the basic concepts in freight forwarding. Enumerate all freight forwarding jobs, distinguish between customs documents, human resources working in logistics. Seminar paper created and presented (by computer programs). | 4 h |
| | 4. | Warehouses and storage (concept, types and division, the factors for determining the location, equipment and furnishing warehouses, methods of storage operations) | 1, 3, 6, 7 | They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | 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, 3, 6, 7 | They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or the written and oral exam, students can 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). | 4 h |



| 1 | | | | | | |
|---|----|--|-----------------------|--|---|------------|
| | 6. | Freight terminals and Freight- transportation centers (concept and division, development goals of Freight-transportation center, functions, services, 3PL) | 1, 3, 6, 7 2, 6, 7 | They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or the written and oral exam, students can define the basic terms of the Freight terminals and the Freight-transportation centers. Distinguish between Freight-transport centers by size and location. Select and categorize services provided at terminals and centers. Seminar paper created and presented (by computer programs). 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 4 h |
| | 8. | Information and communication system in the function of logistics (video films) | 2, 6, 7 | They use multimedia and network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or written and oral exam, students know how to define and describe the Bar code technology, RFID identification, voice technology, and technology Pick to light. Establish the difference, strengths and the weakness of using it. Seminar paper created and presented (by computer programs). | 4 h |



| 1 | | | | | |
|----|--|------------|--|--|-----|
| 9. | manipulation with products (inventory planning and control, supply chain, packaging of goods, palletization and containerization) | 5, 6, 7 | They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or the written and oral exam, students can propose ways of manipulating with products (packaging, palletizing) and reducing the cost of supplies (supply chain). Define and describe Supply Chain and Just in time procurement. Identify the difference between applying pallets and containers. Seminar paper created and presented (by computer programs). At the colloquium or the written and | 4 h |
| | 5. Transportation in the logistics system (road, rail, air and pipeline transport, inland waterways transport, transport costs, transport documents) | 2, 4, 6, 7 | 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 conoquium of the written and oral exam, students know how to distinguish transport modes in logistics, in all branches of traffic. Identify the advantages, disadvantages and costs of transportation. Seminar paper created and presented (by computer programs). | 4 n |
| 11 | transport logistics (conditions for development, integral transport, technologies on the road, rail, water, and air transport) | 2, 4, 6, 7 | They use multimedia nad network. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | 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). | 4 h |
| 12 | 2. Distribution and ordering of goods (concept, purpose, and structure of | 4, 6, 7 | They use multimedia and network. They listen to a lecture and read literature. At the | At the colloquium or the written and oral exam, students can define the | 4 h |



| 1 | | | | | |
|-----|--------------------------------------|------------|--|--|------|
| | the distribution system, | | seminar class, they individually explore the | terms of order and distribution. | |
| | distribution networks, costs in | | content of this topic area by searching the | Propose the ways of orders in case | |
| | distribution, term of the order, | | database, and on the basis of it and reading | of missing products. Determine the | |
| | processes in ordering) | | the literature, create a seminar paper that | difference between physical | |
| | | | presents the acquired knowledge and presents | distribution and distribution | |
| | | | their own ideas, and ways to solve problems. | channels. Compare and explain | |
| | | | | distribution network concepts. | |
| | | | | Identify distribution costs. Seminar | |
| | | | | paper created and presented (by | |
| | | | | computer programs). | |
| 13. | City logistics (concept, task, and | | They listen to a lecture and read literature. At | At the colloquium or the written and | |
| | goal of city logistics, initiatives, | | the seminar class, they individually explore | oral exam, students can define the | |
| | the structure of city logistics | | the content of this topic area by searching the | concept and the goal of city | |
| | system, optimization of logistics | | database, and on the basis of it and reading | logistics. Distinguish and isolate | |
| | flows) | | the literature, create a seminar paper that | participants in city logistics. | |
| | | | presents the acquired knowledge and presents | Categorize flows of products in city | |
| | | 4, 5, 6, 7 | their own ideas, and ways to solve problems. | logistics. Identify means of | 4 h |
| | | | | transport. Suggest city logistics | |
| | | | | concepts. Identify the advantages | |
| | | | | and disadvantages of optimizing the | |
| | | | | flow of products. Seminar paper | |
| | | | | created and presented (by computer | |
| | | | | programs). | |
| 14. | Study trip to KONZUM Logistics- | | | On a study tour, students will be able | |
| | distribution center (located in | | | to define and differentiate basic | |
| | Dugopolje). | | | terms and divisions in logistics, | |
| | | | | warehousing, and freight | |
| | | 1, 3, 4, 5 | | forwarding. Select, evaluate and | 8 h |
| | | т, Э, т, Э | | categorize services in the warehouse | 0 11 |
| | | | | business. Compare and connect | |
| | | | | modes of product transport, | |
| | | | | organization of distribution of | |
| | | | | products. Suggest ways of | |



| | | | | 1 | 1 | | | | |
|--|---------|--|----------------------|-----------------|-------------------------------|---------------------------|----------------------------|-------------------|------------|
| | | | | | | | manipulation with the | - | |
| | | | | | | | reducing inventory cos | ts. | |
| | 15. | Final conside | erations/Repeating | _ | They listen to a course | lecture and prepare | _ | | 58 h |
| | | and preparing for | r the exam. | _ | individuals for the exam | | | | |
| 3. EVALUATION OF STUD | ENT V | VORK | | | | | | | |
| 3.1. Student obligations | In acc | ordance with the l | Rulebook on Study | and the Rule | book on Student Assessmen | nt and Evaluation: for | all full-time students att | endance of at l | east 70%. |
| | Part-ti | ime students are re | equired to attend a | class of at lea | ast 50%. All students must | create, present and po | sitively colloquy semin | ar papers. Stud | lents who |
| | have a | achieved during th | ne course: from 0 - | 24,9% ECTS | credits- are rated F (unsuc | ccessful) and cannot each | arn ECTS credits, and n | nust re-enroll ir | n the next |
| | acade | mic year; from 25 | - 49,9% - are asse | ssed by FX (i | insufficient) and must pass | and pass the written e | exam (test). Written exa | m (test) can be | held in a |
| | regula | ar or extraordinary | exam period; more | e than 50% - | students have the right to ta | ke the final exam. Stu | dents can take the final | exam from the | course in |
| | two w | vays: a) during the | course of teaching | through cont | inuous monitoring of stude | nts (active participation | n in classes and through | ı two exams); b |) passing |
| | the ex | am (written and o | ral part of the exam | ı). | | | | | |
| 3.2. Student work monitoring | Atte | ending classes | 1 | | Written exam | 1 (without | Project | | |
| (enter the share of ECTS credits | | | | | | colloqiums) | | | |
| for each activity so that the total | Expe | erimental work | | | Research | | Practical work | | |
| number of ECTS credits corresponds to the course credit | | Esaay | | | Report | | Continuous check | | |
| value) | C | Colloquiums | 1 (without writte | en part of | Seminar paper | 0,5 | (other) | | |
| | | | exam) | | | | | | |
| | Teac | ching activities | 1 | | The oral part of exam | 0,5 | (other) | | |
| 3.3. Student work-load | Studer | nt workload on all | bases is 1 ECTS cre | edit for 30 ser | nester hours and is assessed | as attendance (30 hour | rs), preparation of semin | ar work and pre | esentation |
| | (30 hc | ours), preparation | for the midterm/exa | am through se | elf-study (60 hours). | | | | |
| 4. GRADING SYSTEM | | | | | | | | | |
| 4.1. Evaluation of seminar paper | E | Elements of | Bac | 1 | Satis | fying | Above | e average | |
| | 6 | evaluation | | | | | | | |
| | 0 | Organization | The paper is not | organized in | a The paper is well str | ructured with a clear | The paper is well | structured with | n a clear |
| | | | logical order and l | lacks structur | e. distinction between the | introduction, the main | distinction between | the introduc | tion, the |
| | | body of the text and the conclusion. main body of the text and the | | | | | | ext and the co | nclusion, |
| | | | | | | | which are logically in | nterconnected. | |
| | Term | ninolog, writing | Words and expres | sions are not | in Words and expression | ons are in line with | Words and express | ions are alig | ned with |
| | | style | line with official | l terminolog | y. official terminology. | The writing style is | s official terminolo | gy and sh | iow an |
| | | | The writing s | style is n | ot appropriate, the senter | nce structure is clear, | , understanding of the | ir meaning. Th | e writing |



| | | appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors. | the vocabulary is appropr few grammatical errors. | iate and there are | • | ne sentences are clear and alary is rich and there are prs. |
|--|---|---|---|-------------------------------------|--|---|
| | 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 bu with errors. The references topic and show a sati attitude. | are relevant to the | consistently listed appropriate, their | curately, completely and . The references are list is "rich" and shows a detailed research |
| 4.2. Gradeing of the colloquium/written and oral | | Bad | Satisfyin | g | Abov | ve average |
| exam | It does not know or app | y without a deeper understanding. y basic terms and concepts. It does y or explain the contents of the | It reproduces the basic cor difficulty imparts ne understands the material, of and concepts that it suppor | ew knowledge, explains the terms | synthesis, and eva legality, accurately the content of the connects and explai that it supports solutions that were | the level of analysis, luation. It observes the and thoroughly explains material, and logically ns the terms and concepts with examples. Finds e not originally given. It <i>v</i> ith related material. |
| 4.3. Forming the final grade according to the evaluation | Active attendance on class | 70-75% attendance | 76-86% attendance | 87-100% | attendance | Mental map created, Case studies resolved |
| elements | | 2 points | 4 points | 7 p | ooints | 3 points |
| | Seminar paper | 2 | 3 | | 4 | 5 |
| | Seminar paper | 5 points | 7 points | 8 p | ooints | 10 points |
| | | 2 | 3 | | 4 | 5 |
| | Colloquiums/ Written part of exam | 50 - 64,9% | 65 - 79,9% | 80 - | 89,9% | 90 - 100% |
| | which put of exam | 25 points | 30 points 35 | | points | 40 points |
| | Oral part of exam | 2 | 3 | | 5 | 5 |
| | | 25 points | 30 points 35 | | points 40 points | |



| 4.4. Formation of the final grade based on the absolute | Percentage of acquired knowledge, skills and competencies (teaching + final exam) | Numerical grade | EC | TS grade | | |
|--|--|---|---|--|--|--|
| distribution | 90 - 100% | | А | | | |
| | 80 - 89,9% | 4 (very good) | В | | | |
| | 65 - 79,9% | 3 (good) | | С | | |
| | 60 - 64,9% | 2 (sufficient) | | D | | |
| | 50-59,9% | 2 (sufficient) | | Е | | |
| 5. ADDITIONAL INFORMATI | ON ABOUT COURSE | | | | | |
| 5.1. Compulsory literature (available in the library and via | Title | | Number of copies in the library | Availability via other media | | |
| other media) | Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding a Transport and traffic sciences, University of Zagreb, Zagre | e | - | City of Sibenik library | | |
| | Mlinarić Josip T.: Freight-transport Centers, Faculty of Tra of Zagreb, 2013 (selected chapters) | nsport and traffic sciences, University | - | PDF (Internet website) | | |
| | Zelenika R.: Logistics Systems, University of Rijeka, Facu (selected chapters) | lty of Economics, Rijeka, 2005 | 2 | | | |
| | Bloomberg D.: Logistics, MATE, Zagreb School of Econor (selected chapters) | mics and Management, Zagreb, 2006 | - | City of Sibenik library | | |
| 5.2. Additional literature (at the moment of changes and/or | Teaching materials from lectures and seminars on the e-Le. Sibenik for the mentioned course. | | | e-learning system City of Sibenik library | | |
| amended of study programme) | Zelenika R.: Transport Systems, University of Rijeka, Facu Zelenika R.: Transport and freight forwarding business, Un Economics, Rijeka, 2001. Logistics <u>www.logistika.com.hr</u> | | 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 a | nd Alumni association. | | | |



| 5.4. Informing about the course | It is the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of classes or possible |
|---------------------------------|--|
| and contacting the course | adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers |
| lecturer | 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 | ON | | | | | | | |
|---|---|---|---|--|--|--|--|--|
| 1.1. Course lecturer title | ENGLISH LANGUAGE II | 1.8. Course code in ISVU | 187599 | | | | | |
| 1.2. Course title lecturer | MSc. Ivana Kardum Goleš, 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 + 15 + 0 + 0) | | | | | |
| 1.4. Study programme(specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes \Box no | | | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | |
| 2. COURSE DESCRIPTION | | | | | | | | |
| 2.1. 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: To apply and link professional terms from in Croatian and English. | technology and organization of road traffic in written and ora | l communication with the professional public | | | | | |



| | LO2: 7 | To organize and implement tear | n work, and c | ritically judge the opinions and attitude | es of team members. | | |
|---|--------|--|------------------|--|--|--|----------------|
| | LO3: 7 | Γο individually and responsibly | search, interp | ret and integrate the relevant literature | needed to make decisions. | | |
| | Lear | Level of LO: 1- remembering 2- understandin 3- application, 4- analysis, 5- evaluation, 6- synthesis | | | | | |
| | 1 | | | m the professional terminology of Eng | lish road traffic in English | 2,3 | |
| | | 2. to apply grammatical struct | | 6 | | 3 | |
| | | 3. to interpret and use tenses i | | | | 3,4 | |
| | | to develop an essay within to present own ideas for de | - | | | 5,6 | |
| | | 1 | 1 | thin the subjects of the course, to expre | ess one own oninions | 6 | |
| | | 7. to compare and evaluate di | | | | 5 | |
| | - | 8. to analyse medium complex | | | | 4 | |
| | 9 | b. to use part of the general la | | | | 6 | |
| | Cons | tructive allignement | | | | | |
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | | Time needed |
| 2.5. Course content according to detailed curriculum schedule | 1. | Introduction into the course and detailed plan. | - | Listen to lectures. Work independently on computer, get to know course content and elearning documents. | - | | 2 h |
| | 2. | CARS` ANATOMY - Adjectives and their formation | 1, 2, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and applied grammatical structures of are evaluated, understand, apply from the professional terminol road traffic and use them in w communication verb tenses are | n texts and tasks y and link terms logy of English written and oral | 4 h |



| 1 | | | | | | |
|---|-----------------------------|---------------------------|--------------------------------|--|--|------|
| | | | | | real linguistic context, use part of other language | |
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | | | | applied grammatical structures on texts and tasks | |
| | | | | | are evaluated, verb tenses are interpreted in a real | |
| | | | | | linguistic context, can communicate in foreign | |
| | | MANAGEMENT IN | | Listen to lectures and read | languages within the course topic, express their | |
| | 3. | TRAFFIC - Adverbs and | 1 2 2 4 0 | literature. Use multimedia and | own opinions, present their own ideas related to | 4 h |
| | 5. | their formation | 1, 2, 3, 4, 9 | internet. Solve exercises. | the development of transport solutions to develop | 4 11 |
| | | their formation | | | a longer essay within course topics, comparing | |
| | | | | | and evaluating different solutions in the traffic of | |
| | | | | | other countries, analyze medium complex texts | |
| | | | | | and solve tasks, use part of other language | |
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | | | Listen to lectures and read | 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 | |
| | | In the train – expressing | | | own opinions, present their own ideas related to | |
| | 4. | present | 1, 2, 3, 9 | literature. Use multimedia and | the development of transport solutions to develop | 4 h |
| | | - | | internet. Solve exercises. | a longer essay within course topics, comparing | |
| | | | | | and evaluating different solutions in the traffic of | |
| | | | | | other countries, analyze medium complex texts | |
| | | | | | and solve tasks, use part of other language | |
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | MODERN | | . | applied grammatical structures on texts and tasks | |
| | 5. MODERN TRANSPORTATION | | Listen to lectures and read | are evaluated, verb tenses are interpreted in a real | | |
| | | 1, 2, 3, 6, 9 | literature. Use multimedia and | linguistic context, can communicate in foreign | 4 h | |
| | | (HYDROFOILS) – Modal | | internet. Solve exercises. | languages within the course topic, express their | |
| | verbs | | | own opinions, present their own ideas related to | | |
| | | | | | the development of transport solutions to develop | |
| | | | | | rrr to attrict | |



| | | | | a longer essay within course topics, comparing | |
|----|-----------------------------|-------------|---------------------------------------|--|-------|
| | | | | and evaluating different solutions in the traffic of | |
| | | | | other countries, analyze medium complex texts | |
| | | | | and solve tasks, use part of other language | |
| | | | | competences at B1 level. | |
| | | | | In colloquium or written and oral exams the | |
| | | | | applied grammatical structures on texts and tasks | |
| | | | | are evaluated, verb tenses are interpreted in a real | |
| | | | | linguistic context, can communicate in foreign | |
| | RAIL TRAFFIC IN | | Listen to lectures and read | languages within the course topic, express their | |
| 6. | EUROPE – Expressing | 1, 2, 3, 5, | literature. Use multimedia and | own opinions, present their own ideas related to | 4 h |
| 0. | habit | 6, 9 | internet. Solve exercises. | the development of transport solutions to develop | 7 11 |
| | haon | | | a longer essay within course topics, comparing | |
| | | | | and evaluating different solutions in the traffic of | |
| | | | | other countries, analyze medium complex texts | |
| | | | | and solve tasks, use part of other language | |
| | | | | competences at B1 level. | |
| | | | | In colloquium or written and oral exams the | |
| | | | | applied grammatical structures on texts and tasks | |
| | | | Listen to lectures and read | are evaluated, verb tenses are interpreted in a real | |
| | | | literature. During lectures | linguistic context, can communicate in foreign | |
| | | | individually research the content of | languages within the course topic, express their | |
| 7. | Traffic in the USA – Tenses | 1, 2, 3, 5, | this thematic field by searching data | own opinions, present their own ideas related to | 6 h |
| /. | frame in the OSTA Tenses | 6, 9 | bases, presentt acquired knowledge, | the development of transport solutions to develop | 0 11 |
| | | | express their own ideas and ways of | a longer essay within course topics, comparing | |
| | | | problem solving. Brainstorming, | and evaluating different solutions in the traffic of | |
| | | | discussion. Solve exercises. | other countries, analyze medium complex texts | |
| | | | | and solve tasks, use part of other language | |
| | | | | competences at B1 level. | |
| | | | | In colloquium or written and oral exams the | |
| 8. | Traffic for tomorrow – | 1, 2, 3, 5, | Listen to lectures and take part in | applied grammatical structures on texts and tasks | 10 h |
| 0. | Tenses, I colloquium | 6, 9 | discussion. Write the colloquium. | are evaluated, verb tenses are interpreted in a real | 10 11 |
| | | | | 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. | |
|-----|--|---------------------|---|---|-----|
| 9. | Hovercraft – Indirect speech | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 6 h |
| 10. | Magnetic levitation trains – Personal and reflexive pronouns | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Solve exercises. Discuss. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 6 h |



| 1 | | | | | | |
|---|-----|---|---------------------------------|--|---|------|
| | 11. | Steam engine cars – Future tenses | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| | 12. | Post office and their role in the progress of mankind – Future tenses | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| | 13. | Climate changes and telecommunication | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of | 4 h |



| 1 | | | | | | |
|----------------------------|--------|----------------------------------|------------------------------|--|---|---------------|
| | | | | | other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | |
| 14 | 14. | Sattellites | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 6 h |
| | 15. | Revision – II colloquium | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| 3. EVALUATION OF STUDEN | TS` W | ORK | | | | |
| 3.1. Students' obligations | 70% is | s required. Part-time students a | re required to a | attend classes at least 50%. The students | nt and Evaluation: for all full-time students attendants à acquired knowledge is tested during the course class cess, with particular attention being paid to the stud | sses. Special |

participation in teaching as well as his/her presentation of the written work that the student produces for homework. Of particular importance for the final



| | evaluation are the two written tests that students take during the semester. If the student successfully passes both exams, he / she is exempted from the written part of the final exam and is obliged to take the oral exam only. The final exam consists of a written and an oral part. Ways to check learning outcomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform oneself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Polytechnic of Šibenik and the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available. | | | | | | | | |
|---|--|---|---------------|----------------------------|---------------------|--|---|--|--|
| | Attendance 0, | | Written exam | | 1 (without colloque | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | | Practical work | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | | Continuous examination | | | |
| corresponds to the credit score of the course) | Colloguium | (without written am) | Seminar pap | ber | | Other | | | |
| | Class activity 0, | 5 | Oral exam 1 | | Other | | | | |
| 3.3. Student workload 4. GRADING SYSTEM | • | Il bases for 1 ECTS sses and exercises 4 loquia or exams thre | 5 hours | | | as: | | | |
| 4. GRADING SISIEM | ſ | | | | | | | | |
| 4.1. Grading seminar papers | - | | | | | | | | |
| | Unsatisfa | actory | Satisfactory | | | Above average | | | |
| 4.2. Grading colloquia/ written and oral exam | Responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples. | | difficulty in | nparts ne e material, e | xplains the terms | evaluation. Observes the thoroughly explains the conter connects and explains the term | of analysis, synthesis and principles, accurately and at of the material, and logically as and concepts supported with at were not originally given. material. | | |
| 1.3 Final grade according to | Active course | 70-75% of | attendance | 76-86% | of attendance | 87-100% of attendance | Maksimum bodova | | |
| 4.3. Final grade according to evaluation elements | attendance | 3 ро | ints | | 7 points | 20 points | 20 bodova | | |
| | Seminar paper | | | | | | | | |



| | Callernia / Written | 2 | 3 | 4 | 5 | |
|---|----------------------------|--|------------------|-----------|------------|--|
| | Colloquia/ Written exam | 50-64,9% | 65-79,9% | 80-89,9% | 90-100% | |
| | CAUII | 25 points | 30 points | 35 points | 40 bodova | |
| | Oral avam | 2 | 3 | 4 | 5 | |
| | Oral exam | 25 points | 30 points | 35 points | 40 bodova | |
| | | l knowledge, skills and competence hing + final exam) | Numerical grade | | ECTS grade | |
| 4.2 Final made according to | | 90 - 100% | 5 (excellent) | | А | |
| 4.3. Final grade according to absolute division | | 80-89,9% | 4 (very good) | | В | |
| | | 65 - 79,9% | 3 (good) | | С | |
| | | 60 - 64,9% | 2 (satisfactory) | | D | |
| | | 50-59,9% | 2 (satisfactory) | | E | |

5. ADDITIONAL COURSE INFORMATION

| 5.1. Compulsory literature (available in the library and via other media) | Title | Number of copies in the library | Availability via other media |
|---|---|---------------------------------|---------------------------------|
| | Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport nad traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters) | 10 | Х |
| 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. Martinet: "A Practical English Grammar exercises II", Oxford University | 10 | X (elearning, 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 attendance and student activity during classes and provided information on students` progress through short further guidance to students will be provided in order to increase the efficiency of their work. Students will | t colloquiums and homew | vork, information for |



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



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

| 1. GENERAL INFORMATI | ON | | |
|--|---|--|---|
| 1.1. Course title | TECHNICAL MECHANICS | 1.8. Course code in ISVU | 187600 |
| 1.2 Course lecturer | Luka Olivari, mag. eng. mech., lecturer | 1.9. Course code in MOZVAG | |
| 1.3. Assistants and/or associates | MSc. Srećko Đuranović, senior lecturer | Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 45 + 0 + 0) |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1.11. Level of e- learning application (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 | X yes □ no |
| 1.7. Credit score (ECTS) | 8 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ |
| 2. COURSE DESCRIPTION | I | | • |
| 2.1. Course objectives | ± | al knowledge and practical examples: to introduce into the); master the application of the acquired knowledge for sol- nechanics for the application in practice. | 1 |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification le | vel 4.2 according to the CROQF. | |
| 2.3. Learning outcomes on the | LO4: To apply knowledge from the field of natural and tec | hnical sciences to problems in road traffic. | |
| study programme level | LO8: To solve problems in traffic by using analytical and | or graphical methods. | |
| | | | Level of LO: |
| | | | 1- memory, |
| 2.4. Expected learning outcomes | Learning outcomes by Bloom: (maximum 2 werbs for LC |)) | 2- understanding, |
| on the course level (4-10 | Learning outcomes by Broom. (maximum 2 werbs for Ec | <i>''</i> | 3- application, |
| learning outcomes) | | | 4- analysis, |
| | | 5- evaluation, | |



| | | | | | | 6– synthesis. | |
|---|--------|---|------------------|---|--|---|----------------|
| | 1. | Define and explain basic concepts in | 1, 2 | | | | |
| | 2. | Explain and analyze the axioms of mechanics. | of solid state | statics and physical laws and phenomena in | the field of | 2,4 | |
| | 3. | Apply and analyze equilibrium equa | ations for a rig | id body. | | 3,4 | |
| | 4. | Evaluate the consequences of the ac analytical methods. | ction of a syste | em of forces and / or static moment using grap | hical and | 5 | |
| | 5. | Sketch the diagrams of internal force | es and momer | nts for straight solid beam | | 4 | |
| | 6. | Identify the type of motion of a part | ticle or solid a | nd solve numerical problems in the field of kin | nematics. | 4,4 | |
| | 7. | Analyze and sketch kinematic diagr | ams of the mo | otion of a particle or solid. | | 4,4 | |
| | 8. | Select physical laws and principles the dynamics of particles and solids | | the problem, and use them to solve numerical | l problems in | 5, 4 | |
| 2.5. Course content according to detailed curriculum schedule | Constr | uctive allignement | | | | | |
| | No | Thematic unit | LO of the course | Content/teaching methods |] | Evaluation | Time needed |
| | | Introductory presentation | 1 | Listen to a lecture. By working | - | uium or the written and | 6 h |
| | 1 | (introducing students to the content and obligations of the | | independently on a computer, they are introduced to the course content, writing a | the basic ter | ney define and explain rms, physical quantities | |
| | 1. | course). Field of study and division of technical mechanics. Basic concepts, physical quantities and units of technical mechanics. | | seminar paper and documents on the e- learning page of the course. The exercises demonstrate how to solve tasks. Independent task solving. | and units of | measurement. | |
| | 2. | Laws and axioms of statics. A system of forces, coupling forces and torques. | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. | oral exam explain and solid state st | uium or the written and they know: to define, analyze the axioms of atics and physical laws of mechanics; solve | 6 h |
| | | | | | numerical ta area; evaluar | te the consequences of a system of forces and / | |



| 1 | 1 | | | | | |
|---|----|------------------------------------|---------|--|--|------|
| | | | | | or static moment using graphical and | |
| | | | | | analytical methods. | |
| | | Equilibrium and equilibrium | 1, 3, 4 | Listen to a lecture and read literature. The | Apply and analyze equilibrium | |
| | | conditions. Graphic equilibrium | | exercises demonstrate how to solve tasks. | equations for a rigorous or written | |
| | | conditions. | | Independent task solving. | and oral exam, evaluate the | |
| | 3. | | | | consequences of the action of a | 6 h |
| | 0. | | | | system of forces and / or static | 0.11 |
| | | | | | moment using graphical and | |
| | | | | | analytical methods, solve numerical | |
| | | | | | problems in the specified field. | |
| | | The center of gravity of a rigid | | Listen to a lecture and read literature. The | At the colloquium or the written and | |
| | | body. Friction | | exercises demonstrate how to solve tasks. | oral exam they know how to define, | |
| | | | | Independent task solving. | explain the center of gravity and | |
| | | | | | calculate the coordinates of the | |
| | 4. | | 1, 3 | | center of gravity of the rigid body; | 6 h |
| | | | | | define and explain friction, analyze | |
| | | | | | the impact of friction; solve | |
| | | | | | numerical tasks from the specified | |
| | | | | | area. | |
| | | Straight full beam, diagrams of | | Listen to a lecture and read literature. The | They can apply and analyze the | |
| | | internal forces and moments. | | exercises demonstrate how to solve tasks. | equations of equilibrium for a | |
| | F | | 2 4 5 | Independent task solving. Individual | straight full carrier, evaluate the | (1 |
| | 5. | | 3, 4, 5 | preparation for colloquiums. | consequences of the action of a force | 6 h |
| | | | | | system, sketch diagrams of internal | |
| | | | | | forces and moments at a colloquium or a written and oral exam. | |
| | | Introduction to particle and solid | | Listen to a lecture and read literature. The | At the colloquium or written and | |
| | | body kinematics. | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | body kinematics. | | Independent task solving. | explain the basic concepts in | |
| | 6. | | 1, 6, 7 | independent usk solving. | kinematics, identify the type of | 6 h |
| | 0. | | 1, 0, 7 | | motion of a particle or solid, solve | 0 11 |
| | | | | | numerical problems in the field of | |
| | | | | | kinematics. | |
| | | | | | Amemanob. | |



| | | Stariality matter 1: | | Tister to a laster of the different of the | | 1 |
|--|-----|----------------------------------|---------------|--|---------------------------------------|------|
| | | Straight motion, kinematic | | Listen to a lecture and read literature. The | At the colloquium or written and | |
| | | diagrams | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | _ | | | Independent task solving. | explain the basic concepts in | |
| | 7. | | 1, 6, 7 | | kinematics, identify the type of | 6 h |
| | | | | | motion of a particle or solid, solve | |
| | | | | | numerical problems in the field of | |
| | | | | | kinematics. | |
| | | Variable linear motion, harmonic | | Listen to a lecture and read literature. The | At the colloquium or the written and | |
| | | motion | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | | | Independent task solving. | explain the basic concepts in | |
| | 8. | | 1, 6, 7 | | kinematics, identify the type of | 6 h |
| | | | | | motion of a particle or solid, solve | |
| | | | | | numerical problems in the field of | |
| | | | | | kinematics. | |
| | | Curvilinear movement, circular | | Listen to a lecture and read literature. The | At the colloquium or the written and | |
| | | motion. | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | | | Independent task solving. Individual | explain the basic concepts in | |
| | 9. | | 1, 6, 7 | preparation for colloquiums. | kinematics, identify the type of | 6 h |
| | | | _, _, . | L. L | motion of a particle or solid, solve | |
| | | | | | numerical problems in the field of | |
| | | | | | kinematics. | |
| | | An introduction to particle and | | Listen to a lecture and read literature. The | At the colloquium or written and | |
| | | solid body dynamics. | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | sona boay aynames. | | Independent task solving. | explain basic concepts in dynamics, | |
| | | | | independent usk solving. | explain and analyze physical laws in | |
| | | | | | the field of mechanics, evaluate the | |
| | 10. | | 1, 2, 4, 6, 8 | | consequences of the action of forces | 6 h |
| | 10. | | 1, 2, 4, 0, 0 | | and moments, identify the type of | 0 11 |
| | | | | | | |
| | | | | | motion of a particle or solid, select | |
| | | | | | physical laws and principles, and use | |
| | | | | | them solve numerical tasks in the | |
| | | | | | field of dynamics. | |



| 1 | | 1 | | | | |
|---|-----|------------------------------------|---------------|--|---------------------------------------|-----|
| | | D'Alembert principle, mechanical | | Listen to a lecture and read literature. The | At the colloquium or written and | |
| | | work and power | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | | | Independent task solving. | explain basic concepts in dynamics, | |
| | | | | | explain and analyze physical laws in | |
| | | | | | the field of mechanics, evaluate the | |
| | 11. | | 1, 2, 4, 6, 8 | | consequences of the action of forces | 6 h |
| | | | | | and moments, identify the type of | |
| | | | | | motion of a particle or solid, select | |
| | | | | | physical laws and principles, and use | |
| | | | | | them solve numerical tasks in the | |
| | | | | | field of dynamics. | |
| | | Mechanical energy, the law of | | Listen to a lecture and read literature. The | At the colloquium or written and | |
| | | conservation of mechanical energy | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | | | Independent task solving. | explain basic concepts in dynamics, | |
| | | | | | explain and analyze physical laws in | |
| | | | | | the field of mechanics, evaluate the | |
| | 12. | | 1, 2, 4, 6, 8 | | consequences of the action of forces | 6 h |
| | | | | | and moments, identify the type of | |
| | | | | | motion of a particle or solid, select | |
| | | | | | physical laws and principles, and use | |
| | | | | | them solve numerical tasks in the | |
| | | | | | field of dynamics. | |
| | | Force impulse, quantity of motion, | | Listen to a lecture and read literature. The | At the colloquium or written and | |
| | | law of quantity of motion, law of | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | conservation of quantity of | | Independent task solving. | explain basic concepts in dynamics, | |
| | | motion, collisions | | | explain and analyze physical laws in | |
| | | | | | the field of mechanics, evaluate the | |
| | 13. | | 1, 2, 4, 6, 8 | | consequences of the action of forces | 6 h |
| | | | | | and moments, identify the type of | |
| | | | | | motion of a particle or solid, select | |
| | | | | | physical laws and principles, and use | |
| | | | | | them solve numerical tasks in the | |
| | | | | | field of dynamics. | |



| | | Dynamic moment of inertia, rigid | | Listen to a lecture and read literature. The | At the colloquium or written and | |
|--------------------------|----------|--|----------------|--|---|-----------|
| | | body rotation | | exercises demonstrate how to solve tasks. | oral exam they can define and | |
| | | | | Independent task solving. Individual | explain basic concepts in dynamics, | |
| | | | | preparation for colloquiums. | explain and analyze physical laws in | |
| | | | | | the field of mechanics, evaluate the | |
| | 14. | | 1, 2, 4, 6, 8 | | consequences of the action of forces | 6 h |
| | | | | | and moments, identify the type of | |
| | | | | | motion of a particle or solid, select | |
| | | | | | physical laws and principles, and use | |
| | | | | | them solve numerical tasks in the | |
| | | | | | field of dynamics. | |
| | 15. | Final consideration | | Listen to a lecture and read literature. | - | 6 h |
| | 15. | Thiai consideration | | Prepare individually for the exam. | | 011 |
| 3. EVALUATION OF STUD | ENT W | ORK | | | | |
| | In acco | rdance with the Rulebook on Study a | ind the Rulebo | ook on Assessment and Evaluation of Student | Performance: Full-time students are re | quired to |
| | attend o | classes at least 70%, which is also a re | quirement for | obtaining the lecturer's signature. Full-time st | udents are required to attend a minimur | n of 70% |
| 3.1. Student obligations | of class | es by the day of the colloquium, and to | o earn a minim | um of 25% of the points at the previous colloqu | iums in order to qualify for the next col | loquium. |
| | Student | ts can take the final exam in the cour | se in two way | s: a) during the course, by taking three colloq | uiums and oral part of the exam; b) pa | ssing the |
| | written | and oral part of the exam. | | | | |

| | I | | | | | | | |
|---|--|--------------------------|------------------|-------------------|----------------------|--|--|--|
| | Attending classes | 3 | Written exam | 3 (without | Project | | | |
| 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) | | | | colloquiums) | | | | |
| | Experimental work | | Research | | Practical work | | | |
| | Essay | | Report | | Continuous check | | | |
| | Colloquiums | 3 (without written exam) | Seminar paper | | Field works or Study | | | |
| | | | | | trips | | | |
| | Teaching activities | | The oral part of | 2 | (other) | | | |
| | | | exam | | | | | |
| 3.3. Student work-load | Student workload on all bases is 1 ECTS credit for 30 hours of work per semester and is estimated as going to fieldwork or study trips (30 hours), | | | | | | | |
| | preparation of seminar work and presentation (30 hours). | | | | | | | |
| | Obligation | | | Hours (estimated) | | | | |
| | 1. Attending classes | | | 90 | | | | |



| | 2. Colloquiums and | | | | | | | | | |
|---------------------------------|--|---|---|---|---|--|--|--|--|--|
| | 3. Oral exam indivi | idual preparation | | 60 | | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | | |
| | Elements of evaluation | Bad | | Satisfying | Above average | | | | | |
| 4.1. Evaluation of written exam | Physical quantities and their units of measurement | Nonstandard physical units have not been converted to basic or have been converted wrong. | | | Nonstandard units have been converted to base units without error. | | | | | |
| | Structure, traceability, legibility and orderliness of the procedure, diagrams and sketches | eability, The task is not properly structured, it lerliness is not traceable, and it is not readable. Diagrams and sketches are non- | | sk is satisfactorily structured, e and readable. The diagrams and s are meaningful, neat with minor | 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. | problem physical incorpor expressi | expressions that describe the in question, accurately derives I quantities from the expression, rates numerical values into the ion with smaller numbers, the sult has smaller deviations from ct 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. | deeper understanding. Does not knowwithor apply basic terms and concepts.knowDoes not know how to apply orexplanation | | dge, understands the material, s the terms and concepts supports ith examples. Knows the expert | Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles of physical laws, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts and supports them with examples. Finds solutions that were not originally given. It notes correlations with related material. Fluent in professional terminology. | | | | | |



| | Colloquiums/ 2 | | 3 4 | | 4 | 5 | |
|---|--|--|---|----------------|----------|------------------------------|--|
| 4.3. Forming the final grade | Written exam | 50-64,9% | 65-79,9% | | 9,9% | 90-100% | |
| according to the evaluation | | 50-64,9 points | 65-79,9 points | | 9 points | 90-100 points | |
| elements | The oral part of exem | 2 | 3 | | 4 | 5 | |
| | The oral place of energy | 50-64,9 points | 65-79,9 points | | 9 points | 90-100 points | |
| | | · 1 | 0 <i>5-73</i> , <i>3</i> points | 80-89, | 9 points | 30-100 points | |
| | • . | ed knowledge, skills and aching + final exam) | Numerical grade | | | ECTS grade | |
| 4.4. Energy of the final and | 90 - | - 100% | 5 (excellent) | | | А | |
| 4.4. Formation of the final grade based on the absolute | 80 - | - 89,9% | 4 (very good) | | В | | |
| distribution | 65 - | - 79,9% | 3 (good) | | С | | |
| | 60 - | - 64,9% | 2 (sufficient) | 2 (sufficient) | | D | |
| | 50 – 59,9% 2 (sufficient) | | | | Е | | |
| 5. ADDITIONAL INFORMATI | ON ABOUT COURSE | | | | | | |
| 5.1. Compulsory literature (available in the library and via other media) | | Title | | | | Availability via other media | |
| | Srećko Đuranović: Boo | k from course Tehnical mech | anics, Polytechnic of Šibenik, Šibe | nik, 2015. | - | on-line (e-learning) | |
| 5.2 Additional literature (c) the | Teaching materials from the lectures and exercises Jurum Kipke, J.: Mechanics in traffic engineering, Faculty of transport and traffic sciences, University | | | | | on-line (e-learning) | |
| 5.2. Additional literature (at the moment of changes and/or | of Zagreb, Zagreb, 200 | 1. | - | - 5 | - | | |
| amended of study programme) | University of Zagreb, Z | | n traffic, Faculty of transport and tra | anne sciences, | 5 2 | - | |
| | | nematics and dynamics), Tec | | | | | |

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations



| | as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the | | | | |
|---------------------------------|---|--|--|--|--|
| | Croatian employment service on the annual state of student employment, surveys from employers and Alumni association. | | | | |
| | It is the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of classes or po | | | | |
| 5.4. Informing about the course | adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers | | | | |
| and contacting the course | 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 | | | | |
| lecturer | 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 | 1. GENERAL INFORMATION ABOUT THE SUBJECT | | | | | | | |
|--|---|---|--|--|--|--|--|--|
| 1.1. Coures title | TRAFFIC AND ECOLOGY | 1.8. ISVU course code | 129843 | | | | | |
| 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes 🗆 no | | | | | |
| 1.7. Credit score (ECTS) | 4 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | |

| 2. COURSE DESCRIPTION | |
|---|--|
| 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 |
| | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. |
| 2.3. Learning outcomes on the | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. |
| study programme level | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. |
| | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. |



| | LO11: To identify, predict and propose solutions in road traffic technology and technique. | | | | | | | | |
|---------------------------------|---|--|--|--|--|--|--|--|--|
| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | | |
| | Learning outcomes towards Bloom's taxonomy: (up to two verbs per LO) | LO Level: 1 - Recapture, 2 - Understanding, 3 - Application, 4 - Analysis, 5 - Evaluation, 6 - Synthesis | | | | | | | |
| 2.4. Expected learning outcomes | 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 | | | | | | | |
| on the course level | 2. to analyze and compare the relationship between man and his environment in the historical and contemporary context of traffic and traffic techniques development, | 4, 2 | | | | | | | |
| | 3. It will also provide an example of road traffic impacts on natural ecosystems and parts of the environment (air, water and sea, soil, flora and fauna) and | 2, 3 | | | | | | | |
| | 4. Give an example of measures how to reduce negative impacts of traffic on the environment, | 3 | | | | | | | |
| | 5. Discuss and critically evaluate on the activity of traffic participants as well as traffic experts in accordance with the principles of sustainability and accountability, | 4, 5 | | | | | | | |
| | 6. Use materials and tools to search scientific and professional literature in Croatian and in English, | 3 | | | | | | | |
| | 7. Present accepted knowledge, ideas, problems and solutions independently and in the team. | 6 | | | | | | | |

| | Cons | Constructive alignment | | | | | | | | |
|---|------|--|---|--|---|--------|--|--|--|--|
| | No | Thematic ensemble / Lecture | Thematic ensemble / Lecture LO of the Thematic ensemble / Lecture Content / | | Evaluation | Time | | | | |
| | | Торіс | Course | | _ · · · · · · · · · · · · · · · · | needed | | | | |
| 2.5. Course content according to letailed curriculum schedule | 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 |



| 1 | | | | | | |
|---|----|--|------------------------|---|---|------|
| | 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 |



| 1 | | | | | | |
|---|----|--|------------------------|---|---|-----|
| | | | | acquired knowledge and making their own ideas, and ways to solve problems. Methods of brain storm and discussion on | interpret the choice, analyse the use of vehicles with ICE in the contemporary context of technology development and | |
| | | | | the exposed topic is applied in the whole | science. Created and Presented seminar | |
| | | | | group. | 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 | 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 | 1 h |



| | | | | the exposed topic is applied in the whole | | | |
|---|-----|---|------------------------|---|--|------|--|
| | | | | group. | 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 F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year; | | | | | | | |



| | From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; More than 50% ECTS credits - students have the right to access the final exam of the subject. | | | | | | | | |
|---|---|--|-----------------------|--|------------------------|--|--|--|--|
| | Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the less mental map, solving case studies, making and presenting the seminar paper and passing two colloquia); b) during the course (active particip lessons, creating mental map, solving case studies, creating and presenting the seminar paper) and passing the exam (written and oral exam). | | | | | | | | |
| | Attendance | | Written exam | 2 (by submitting both colloquiums the student is relieved of an written examination) | Project | | | | |
| 3.2. Monitoring student work | Experimental work | | Research | | Practical work | | | | |
| (enter the share of ECTS credits | Essay | | Report | | Continuous examination | | | | |
| for each activity so that the total number of ECTS points corresponds to the credit score of the course) | Colloquium | 3 (by submitting both colloquiums the student is relieved of a written and oral examination) | Seminar paper | 0,5 | Other (inscribe) | | | | |
| | Class activities | 0,5 | Oral exam | 1 (by submitting both colloquiums the student is relieved of an oral examination) | Other (inscribe) | | | | |
| | | | ECTS point for 30 hou | rs of work per semester and | d is estimated as: | | | | |
| | Commitmen | | | Hours (estimate) | | | | | |
| 3.3. Student workload | 1.Attending c2.Creating an | lasses d Presenting seminar pape | r | 45 | 45 | | | | |
| | - | for the Colloquium / exan | | 65 | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | |



| | Valuation Element | Poor | | Sat | tisfying | | | 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 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 text and the text are perfectly logically and the text of the text are perfectly logically and the text of text of the text of t | | r is well-structured with a clear n between the introduction, the of the text and the conclusions perfectly logically linked to one |
| 4.1. Seminar paper grading | Seminar paper grading Terminology, writing style Terminology, writing tyle Terminology, writing | | | | | ng style ncture is ropriate | official understan writing sty clear and | nd phrases are aligned with terminology and show an ding of their meaning. The yle is excellent, the sentences are concise, the vocabulary is rich are no grammatical errors. |
| | Quoting and referencing | and references do not match the t show a superficial approach 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. | |
| | Р | oor | | Satisfying | | | А | bove average |
| 4.2. Colloquium / exam grading | understanding. Does | memory, no deeper not know and does not s and concepts. Cannot ntents of the course. | transfers new k | sic terms, withou nowledge, underst the terms and the examples. | ands subject | evaluatio thorough logically that it er originally | on. It obse ly explain links and ncapsulate | |
| | Active participation in the | 70-75% of attendance | 76-86% | of attendance | 87-100% of attendance | | ance | Created mental map. Solved case study. |
| 4.2 Creating a final grade | lessons | 2 points | 4 | points | 7 | points | | 3 points |
| 4.3. Creating a final grade according to evaluation | Cominon nonon | 2 | | 3 | | 4 | | 5 |
| elements | Seminar paper | 5 points | 7 | points | 8 | points | | 10 points |
| | Colloquium / | 2 | | 3 | | 4 | | 5 |
| | written exam | 50-64,9% | 65 | 5-79,9% | 80-89,9% | | | 90-100% |



| | | 25 points | 30 points | 35 poir | its | 40 points | |
|--|--|--|---------------------------------|---------------------|------------------------------------|---------------------------------|--|
| | Oral anom | 2 3 5 | | | 5 | | |
| | Oral exam | 25 points | 30 points | 35 poir | its | 40 points | |
| | - | pted knowledge, skills and competer (teaching + final exam) | Numerous | grade | ECTS | grade | |
| 4.4. Creating a final grade | | 90-100% | 5 (excel | lent) | A | | |
| 4.4. Creating a final grade according to absolute allocation | | 80-89,9% | 4 (very g | good) | В | | |
| according to absolute anocation | | 65 - 79,9% | 3 (goo | od) | C | | |
| | | 60 - 64,9% | 2 (suffic | ient) | D | | |
| | | 50 - 59,9% | 2 (suffic | ient) | E | | |
| 5. ADDITIONAL INFORMATI | ON ABOUT THE C | COURSE | | | | | |
| | | Title | | | Number of copies in the library | Availability via other media | |
| 5.1. Compulsory literature | European Parliamer | nt and Council of the European Union | n: "White Paper - A Single E | uropean Transport | | | |
| (available in the library and | - | Road to a Comprehensive Transpor | t System Resourcefully Man | aging Resources", | | Available On-line | |
| through other media) | COM (2011) 144fin | | | | | | |
| | Golubić, J.: Traffic Zagreb, 1999. | and environment, Faculty of transp | ort and traffic sciences, Uni | versity of Zagreb, | 5 | Available On-line | |
| 5.2. Additional literature (at the | Radić Lakoš, T.: En | vironmental management, Polytechn | ic of Šibenik, Šibenik, 2018. (| (selected chapters) | | Available On-line | |
| moment of changes and/or | Glavač, V.: Introdu | ction to global ecology, Croatia Univ | | 5 | | | |
| amended of study programme) | | n and environmental, Kigen, Zagreb | | 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. | | | | | | |



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



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

| 1. GENERAL INFORMATION | ON | | | | | |
|--|---|--|---|--|--|--|
| 1.1. Course title lecturer | BASICS OF MECHANICAL ENGINEERING | 1.8. Course code in ISVU | 187601 | | | |
| 1.2 Course lecturer title | Luka Olivari, mag. eng. mech., lecturer | 1.9. Course code in MOZVAG | | | | |
| 1.3. Assistants and/or associates | MSc. Srećko Đuranović, senior lecturer | Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 45 + 0 + 0) | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1.11. Level of e- learning application (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 | 5 | | | |
| 1.6. Year of study | 2 nd 1.13. Modernization | | X yes □ no | | | |
| 1.7. Credit score (ECTS) | 6 | | Less than 20%XMore than 20 %□ | | | |
| 2. COURSE DESCRIPTION | | | | | | |
| 2.1. Course objectives | - | oretical knowledge and practical examples: to introduce into the of the acquired knowledge for solving practical tasks in the fie or solving problems. | - | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualificati | on level 4.2 according to the CROQF. | | | | |
| 2.3. Learning outcomes on the | LO1: To apply and link professional terms from techn in Croatian and English. | ology and organization of road traffic in written and oral commu | nication with the professional public | | | |
| study programme level | | | | | | |
| | LO8: To solve problems in traffic by using analytical and / or graphical methods. | | | | | |
| | | | Level of LO: | | | |
| 2.4. Expected learning outcomes | Learning outcomes by Bloom: (maximum 2 werbs f | for LO) | 1- memory, | | | |
| on the course level (4-10 learning outcomes) | | | 2- understanding, 3- application, | | | |

Stranica 1 od 9



| | Define and explain basic concepts in mechanical engineering. Explain and comment on material characteristics and properties, and procedures for testing material properties. Distinguish between basic machine elements, coupling elements, and power and motion transmission elements. Analyze and evaluate the stress of the material and the deformation due to load on the example. Sizing machine elements based on sizing criteria. Formulate expressions and calculate the gear ratio and power losses in complex power and motion transmissions. Distinguish the basic concepts and laws of heat science and select appropriate laws to solve a given problem. | | | | | | |
|---|--|---|------------------|--|---|--|----------------|
| | 7. 8. | Synthesize the adopted laws to | | •••• | e a given problem. | 4,5 | |
| 2.5. Course content according to detailed curriculum schedule | Constr | uctive allignement | | | | | |
| | No | Thematic unit | LO of the course | Content/teaching methods | Evalu | ation | 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. By working independently on a computer, they are introduced to the course content, writing a seminar paper and documents on the e- learning page of the course. The exercises demonstrate how to solve tasks. Independent task solving. | At the colloquium or exam they define an concepts from the b engineering. | nd explain the basic | 6 h |
| | 2. | Material structure, properties of metals and alloys, properties of materials | 1, 2 | Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. | At the colloquium or exam they know: to e on the characteristics material, as well as examining the mater tasks from the specifi a system of forces an using graphical and a | explain and comment and properties of the the procedures for ial; solve numerical ed area. the action of d / or static moment | 6 h |



| 3. | Types of load and strain. | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. | At the colloquium or the written and oral exam they know: to analyze and calculate the heat conduction and thermal stretching of the material; explain and comment on material characteristics and properties, and material testing procedures; solve numerical tasks from the specified area. | 6 h |
|----|---|------------|---|---|-----|
| 4. | Fundamentals of testing the mechanical properties of materials, Diagram σ-ε, Permissible stress and safety factor | 1, 2, 4, 8 | Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. | At the colloquium or the written and oral exam they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; analyze and evaluate the stress of the material and the deformation due to loading; solve numerical tasks from the specified area. | 6 h |
| 5. | Stress Concentration, Torque Moments, Hardness and Hardness Testing | 1, 2, 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 they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; analyze and evaluate the stress of the material and the deformation due to loading; to dimension machine elements based on sizing criteria; solve numerical tasks from the specified area. | 6 h |
| 6. | Creep and creep test, Toughness and toughness test. | 1, 2, 4 | Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. | At the colloquium or the written and oral exam they know: to explain and comment on the characteristics and properties of the material, as well as the procedures for examining the material; analyze and evaluate the stress of the material and the | 6 h |



| 1 | | | | | |
|-----|---|------------|--|---|-----|
| | | | | deformation due to loading; solve | |
| | | | | numerical tasks from the specified area. | |
| | Division of machine | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | elements. Machine elements: | | exercises demonstrate how to solve tasks. | exam, they are able to: explain and | |
| | rivets, welded joints, | | Independent task solving. | comment on the characteristics and | |
| | soldered joints | | | properties of the material and the | |
| 7. | | 1, 3, 5 | | procedures for examining the material; | 6 h |
| | | | | analyze and evaluate the stress of the | |
| | | | | material and the deformation due to | |
| | | | | loading; solve numerical tasks from the | |
| | | | | specified area. | |
| | Machine Elements: screw | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | joints, clamp joints | | exercises demonstrate how to solve tasks. | exam they know: to distinguish between | |
| | 5 / 15 | | Independent task solving. | the basic elements of machines, the | |
| | | | | elements for coupling, and the elements | |
| 8. | | 1, 3, 5, 8 | | for the transmission of power and motion; | 6 h |
| | | | | analyze and evaluate the stress of the | |
| | | | | material and the deformation due to | |
| | | | | loading; solve numerical tasks from the | |
| | | | | specified area. | |
| | Machine Elements: springs | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| | shafts, bearings, couplings | | exercises demonstrate how to solve tasks. | exam they know: to distinguish between | |
| | 8, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, | | Independent task solving. Individual | the basic elements of machines, the | |
| | | | preparation for colloquiums. | elements for coupling, and the elements | |
| 9. | | 1, 3, 5, 6 | | for the transmission of power and motion; | 6 h |
| | | , , , | | analyze and evaluate the stress of the | |
| | | | | material and the deformation due to | |
| | | | | loading; solve numerical tasks from the | |
| | | | | specified area. | |
| | Machine Elements: bearings, | | Listen to a lecture and read literature. The | At the colloquium or the written and oral | |
| 10 | couplings | | exercises demonstrate how to solve tasks. | exam they know: to distinguish between | |
| 10. | · · · | 1, 3, 5, 6 | Independent task solving. | the basic elements of machines, the | 6 h |
| | | | | elements for coupling, and the elements | |
| I | | | | 1 0, | |



| | | | | for the transmission of power and motion; | |
|-----|--------------------------------|---------------|---|---|-----|
| | | | | analyze and evaluate the stress of the | |
| | | | | material and the deformation due to | |
| | | | | loading; solve numerical tasks from the | |
| | | | | specified area. | |
| | Machine Elements: power | | They listen to a lecture and read literature. | At the colloquium or the written and oral | |
| | transmissions | | The exercises demonstrate how to solve | exam they know: to distinguish between | |
| | | | tasks. Independent task solving. | the basic elements of machines, the | |
| | | | | elements for coupling, and the elements | |
| | | | | for the transmission of power and motion; | |
| 11. | | 1, 3, 5, 6, 8 | | analyze and evaluate the stress of the | 6 h |
| | | | | material and the deformation due to | |
| | | | | loading; calculate the transmission ratio | |
| | | | | and power losses of complex power and | |
| | | | | motion transmitters; solve numerical | |
| | | | | tasks from the specified area. | |
| | Introduction to the science of | | They listen to a lecture and read literature. | At the colloquium or the written and oral | |
| | heat. Kinetic molecular | | The exercises demonstrate how to solve | exam they know: to distinguish between | |
| | theory. | | tasks. Independent task solving. | the basic elements of machines, the | |
| | | | | elements for coupling, and the elements | |
| | | | | for the transmission of power and motion; | |
| 12. | | 1, 2, 7 | | analyze and evaluate the stress of the | 6 h |
| | | | | material and the deformation due to | |
| | | | | loading; calculate the transmission ratio | |
| | | | | and power losses of complex power and | |
| | | | | motion transmitters; solve numerical | |
| | | | | tasks from the specified area. | |
| | Heat conduction. Laws of | | They listen to a lecture and read literature. | At the colloquium or the written and oral | |
| | thermodynamics. | | The exercises demonstrate how to solve | exam they know: to distinguish between | |
| 13. | | 1 7 | tasks. Independent task solving. | the basic elements of machines, the | 6 h |
| 15. | | 1, 7 | | elements for coupling, and the elements | οn |
| | | | | for the transmission of power and motion; | |
| | | | | analyze and evaluate the stress of the | |
| | 1 | | | | |



| | | | | | | | material and the deformation loading; calculate the transmand power losses of complemention transmitters; solve tasks from the specified area. | smission ratio ex power and ve numerical | |
|--|---------------------------------|--|--|------------------------------------|--|--|---|---|----------------------|
| | 14. | Equation of state gas. Changes in gases. | | 1, 7, 8 | The exercises demon | re and read literature. nstrate how to solve sk solving. Individual juiums. | At the colloquium or the we exam they can: define and basic concepts from the mechanical engineering; for to determine the traction for resistance of the vehicle; so tasks from the specified area | d explain the e basics of rmulate terms force and the lve numerical | 6 h |
| | 15. | Circular processe | s | 1, 7, 8 | The exercises demon | re and read literature. nstrate how to solve sk solving. Individual uuums. | - | | 6 h |
| 3. EVALUATION OF STUD | ENT W | ORK | | | | | | | |
| 3.1. Student obligations | attend c of class Student | classes at least 70% es by the day of the | , which is als colloquium, l exam in the | o a requirement and to earn a r | nt for obtaining the lect ninimum of 25% of the | urer`s signature. Full-ti points at the previous co | ident Performance: Full-time me students are required to at olloquiums in order to qualify colloquiums and oral part of t | tend a minimum for the next col | n of 70% loquium. |
| 3.2. Student work monitoring | | ng classes | 3 | | Written exam | 2 (without colloquiums) | Project | | |
| (enter the share of ECTS credits | Experin | nental work | | | Research | | Practical work | | |
| for each activity so that the total | Essay | | | | Report | | Continuous check | | |
| number of ECTS credits corresponds to the course credit | Colloqu | iiums | 2 (without we exam) | vritten | Seminar paper | | Field works or Study trips | | |
| value) | Teachir | ng activities | | | The oral part of exam | 1 | (other) | | |



| | | ases is 1 ECTS credit for 30 hours of v k and presentation (30 hours). | vork per semester and is estimated as goin | g to fieldwork or study trips (30 hours), |
|---------------------------------|----------------------------|---|---|---|
| 3.3. Student work-load | Obligation | | Hours (estimated) | |
| 5.5. Student work-toad | 1. Attending classe | | 90 | |
| | 2. Colloquiums and | d written exam individual preparation | 60 | |
| | 3. Oral exam indiv | idual preparation | 30 | |
| 4. GRADING SYSTEM | | | | |
| | Elements of evaluation | Bad | Satisfying | Above average |
| | Physical quantities and | Nonstandard physical units have not | Nonstandard units have been converted to | Nonstandard units have been converted |
| | their units of | been converted to basic or have been | basic units with minor errors in | to base units without error. |
| | measurement | converted wrong. | calculation. | |
| | Structure, traceability, | The task is not properly structured, it | The task is satisfactorily structured, | The task is clearly structured, complete, |
| | legibility and orderliness | is not traceable, and it is not readable. | traceable and readable. The diagrams and | very neat and legible. The diagrams are |
| | of the procedure, | Diagrams and sketches are non- | sketches are meaningful, neat with minor | completely accurate, clear and very |
| 4.1. Evaluation of written exam | diagrams and sketches | existent, inaccurate, messy, unclear | errors. | neat. |
| | | and ambiguous. | | |
| | Application of | Uses expressions that do not describe | Uses expressions that describe the | Uses expressions that describe the |
| | appropriate equation | the problem specified, or incorrectly | problem in question, accurately derives | problem in question, accurately derives |
| | (formulas) and the final | expresses the physical unit from the | physical quantities from the expression, | physical quantities from expressions, |
| | result. | expression. Numeric values are not | incorporates numerical values into the | lists units of measure without errors, the |
| | | included in the expression. The end | expression with smaller numbers, the | final result is completely accurate. |
| | | result is incorrect. | final result has smaller deviations from | |
| | Vacadadaa | To many and a law many and the set | the exact result. | Knowledge is at the level of an loci- |
| | Knowledge and | It responds by memory, without a | It reproduces the basic concepts and without difficulty imports now | Knowledge is at the level of analysis, |
| | expression. | deeper understanding. Does not know | without difficulty imparts new | synthesis and evaluation. Observes the |
| | | or apply basic terms and concepts. Does not know how to apply or | knowledge, understands the material, explains the terms and concepts supports | principles of physical laws, accurately and thoroughly explains the content of |
| 4.2. Evaluation of oral exam | | explain the contents of the course with | them with examples. Knows the expert | the material, and logically connects and |
| | | examples. | terminology. | explains the terms and concepts and |
| | | examples. | terminology. | supports them with examples. Finds |
| | | | | solutions that were not originally given. |
| | | | | solutions that were not originally given. |



| | | | | | It notes correlations with related material. Fluent in professional terminology. | |
|--------------------------------------|------------------------------|---|---------------------|--------------------|--|--|
| 4.3. Forming the final grade | Colloquiums/ Written exam | 2 50-64,9% | 3 65-79,9% | 4 80-89,9% | 5 90-100% | |
| according to the evaluation elements | - | 50-64,9 bodova | 65-79,9 bodova | 80-89,9 bodov | ra 90-100 bodova | |
| | The oral part of exem | 2 50-64,9 bodova | 3 65-79,9 bodova | 4 80-89,9 bodov | 5 7a 90-100 bodova | |
| | | d knowledge, skills and aching + final exam) | Numerical grade | | ECTS grade | |
| 4.4. Formation of the final grade | 90 - | 100% | 5 (excellent) | | А | |
| based on the absolute | 80 - | 89,9% | 4 (very good) | | В | |
| distribution | 65 – | 79,9% | 3 (good) | | С | |
| | 60 - | 64,9% | 2 (sufficient) | | D | |
| | 50 - | 59,9% | 2 (sufficient) | | Е | |

| 5.1. Compulsory literature (available in the library and via other media) | Title | Number of copies in the library | Availability via other media |
|---|---|---------------------------------------|--------------------------------|
| oner media) | Srećko Đuranović: Book for collequium Basics of mechanical engineering, Polytechnic of Šibenik, Šibenik, 2016. | - | 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 Polytechnic for the course Introduction to Mechanical Engineering. Vrhovski, D., Nikšić, M.: Mechanical engineering. Collection of solved tasks, Faculty of Transport and Traffic Sciences, University of Zagreb, Zagreb, 2005. Perše, S., Višnjić. V.: Mechanical engineering in traffic, Faculty of Transport and Traffic Sciences, University of Zagreb, 2005. | _ | on-line (e-learning) - - |



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



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

| 1. GENERAL INFORMATION | 1. GENERAL INFORMATION | | | | | | | | |
|---|---|---|-------------------------------------|---|--|--|--|--|--|
| 1.1. Course title | STATISTICS IN TRAFFIC | 1.8. Course code in ISVU | 214569 | | | | | | |
| 1.2. Course lecturer | Ana Perišić, grad. eng. math., univ. spec. oecc., 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 + 15 + 0 + | 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 mate 0% | 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 | X yes | no | | | | | |
| 1.7. Credit score (ECTS) | 4 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20% More than 20 % | X 🗆 | | | | | |
| 2. COURSE DESCRIPTION | | | | | | | | | |
| 2.1. Course objectives | The goal is to provide students with theoretical kno | wledge and practical skills needed for performing statistical | analysis and inter | rpretation of the results. | | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification | ation level 4.2 according to the CROQF | | | | | | | |
| 2.3. Learning outcomes on the | LO1: To apply and link professional terms from tec in Croatian and English. | hnology and organization of road traffic in written and oral of | communication w | ith the professional public | | | | | |
| study programme level | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. | | | | | | | | |
| | LO8: To solve problems in traffic by using analytical and / or graphical methods. | | | | | | | | |
| 2.4. Expected learning outcomes on the course level | Learning outcomes accroding to the Bloom's tax | onomy: (up to two verbs per LO) | | Level of LO: 1- remembering, 2- understanding, | | | | | |



| | 1 | . To define fundamental concepts of c statistics. | lescriptive sta | tistics and interpret indicator values fr | rom the field of descriptive | 3- application 4- analysis, 5- evaluation, 6- synthesis 1,2 | , |
|---|---|---|------------------|---|---|---|----------------|
| | 2 | | the measures | s of central tendency and dispersion pa | arameters. | 3, 4 | ļ |
| | 3 | B. To define fundamental concepts and | solve basic p | problems in the field of combinatorics | and probability theory. | 1,4 | |
| | 4. To select and apply probability models for different stochastic phenomena | | | | | 5,3 | |
| | 5. To state the statistical hypothesis and conduct a chi-square test | | | | | 6,4 | |
| | 6. To conduct correlation and regression analysis and derive conclusions on variable relationship 7. To apply descriptive and inferential statistical methods in transport problems solving. | | | | | 4 | |
| | | | statistical me | thods in transport problems solving. | | 4 | |
| | no | tructive allignement Thematic unit | LO of the course | Content/teaching methods | Evaluation | | Time needed |
| | | Introduction into the course and detailed plan. | - | Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations and. | - | | 1 h |
| 2.5. Course content according to detailed curriculum schedule | 1. | Introduction to combinatorics | 3, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic solve basic problems from combinatorics through c written/oral exams. Student probability theory in transp solving. | the field of colloquia or ts will apply | 8 h |
| | 2. | Introduction to combinatorics | 3, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic solve basic problems from combinatorics through c written/oral exams. Student | the field of colloquia or | 10 h |



| - | | | | | |
|----|---|---------|---|---|------|
| | | | | probability theory in transport problems solving. | |
| 3. | Introduction to probability theory. | 3, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will apply probability theory in transport problems solving. | 8h |
| 4. | Introduction to probability theory. A priori probability, a posteriori probability, geometric probability | 3, 4, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will apply probability theory in transport problems solving. | 8 h |
| 5. | Random variable, distributions, expectation, variance. | 3, 4, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena. Students will apply probability theory in transport problems solving. | 8h |
| 6. | Discrete random variable, binomial distribution, Poisson distribution. | 3, 4 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different stochastic phenomena. | 10 h |
| 7. | Continuous random variables. Normal distribution. | 3, 4, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define basic concepts and solve basic problems from the field of probability theory through colloquia or written/oral exams. Students will select and apply probability models for different | 10 h |



| 12 | | 1 | | | (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) | |
|----|-----|--|---------|---|---|-----|
| | | | | | stochastic phenomena. Students will apply probability theory in transport problems solving. | |
| | 8. | Partial exam preparation | | Group problem solving and discussion. Exam preparation. | | 3 h |
| | 9. | Descriptive statistics. | 1, 2, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply methods of descriptive statistics in transport problems solving. | 8h |
| | 10. | Measures of central tendency, dispersion parameters. | 1, 2, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems. | 8 h |
| | 11. | Measures of central tendency, dispersion parameters. Standardized values. Outliers. Data distribution. | 1, 2, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems | 8 h |



| | 12. | Descriptive statistics. Partial exam preparation | 5, 6, 7 | Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation. | Students will define fundamental concepts of descriptive statistics and interpret indicator values from the field of descriptive statistics; will calculate and interpret values for the measures of central tendency and dispersion parameters through colloquia or written/oral exams. Students will apply descriptive statistic methods for solving transport problems | 3 h |
|----------------------------|-------------------|---|--------------------------------|---|---|----------|
| | 13. | Hypothesis testing. Chi-square test. | 5, 7 | Attending lectures. Actively involving students through problem solving and discussion. | Students will state the statistical hypothesis and conduct a chi-square test through colloquia or written/oral exams. Students will apply statistical methods for solving transport problems | 11 h |
| | 14. | Correlation and regression. | 6, 7 | 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 | 11 h |
| | 15. | Final conclusions. Exam preparation | | Group problem solving and discussion. Exam preparation. | | 5 h |
| 3. EVALUATION OF STUDEN | TS` WO | ORK | | | | |
| 3.1. Students` obligations | least 7 during | 0%. Part-time students are required to a the course achieved: from 0 - 24,9% ECTS credits- are rate | ttend classes ed F (unsucce | at least 50%. All students are required essful) and cannot obtain ECTS credits | Evaluation: for all full-time students attendance I to carry calculator and formulae list. Students s, and must re-enroll in the next academic year; | who have |

• 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 three colloquia); b) by passing the exam (written and oral part of the exam). | | | | | | | | |
|---|---|--|---|---|---|--|--|--|--|
| | Attendance | 0.2 | Written exam | 3 (without colloquia | a) Project | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | Practical work | | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | Continuous examination | 0.1 | | | |
| corresponds to the credit score of the course) | Colloquium | 3 (without written exam) | Seminar paper | | Other | | | | |
| | Class activity | 0.2 | Oral exam | 0.5 | Other | | | | |
| 3.3. Student workload | | Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: Attending classes and exercises 45 hours; Preparing colloquia or exams through individual work 75 hours | | | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | |
| 4.1. Grading seminar papers | | | | | | | | | |
| | U | nsatisfactory | Satisfa | ictory | ove average | | | | |
| 4.2. Grading colloquia/ written and oral exam | | nemory, without a deeper Does not know or apply | Reproduces the baseline without difficulty | - | - | evel of analysis, synthesis and he principles, accurately and | | | |
| e 1 | basic terms and | concepts. Does not know explain the contents of the | knowledge, underst explains the terms and with examples. | ands the material, | connects and explains the | ntent of the material, and logically terms and concepts supported with s that were not originally given. ated material. | | | |
| e 1 | basic terms and how to apply or course with exam | concepts. Does not know explain the contents of the | knowledge, underst explains the terms and with examples. | ands the material, d concepts supported | connects and explains the t examples. Finds solutions Notes correlations with rel | terms and concepts supported with s that were not originally given. | | | |
| and oral exam 4.3. Final grade according to | basic terms and how to apply or course with exa Final grade is det Percentage | concepts. Does not know explain the contents of the nples. | knowledge, underst explains the terms and with examples. er successfuly passing | ands the material, d concepts supported | connects and explains the texamples. Finds solutions Notes correlations with rel | terms and concepts supported with s that were not originally given. | | | |
| and oral exam 4.3. Final grade according to evaluation elements | basic terms and how to apply or course with exa Final grade is det Percentage | concepts. Does not know explain the contents of the mples. ermined on the oral exam aft e of acquired knowledge, skil tences (teaching + final exam 90 - 100% | knowledge, underst explains the terms and with examples. er successfuly passing lls and Num n) 5 | ands the material, d concepts supported the colloquia ot written merical grade (excellent) | connects and explains the texamples. Finds solutions Notes correlations with rel | terms and concepts supported with s that were not originally given. ated material. TS grade | | | |
| and oral exam 4.3. Final grade according to | basic terms and how to apply or course with exa Final grade is det Percentage | concepts. Does not know explain the contents of the nples. ermined on the oral exam aft e of acquired knowledge, skill tences (teaching + final exam 90 - 100% 80 - 89,9% | knowledge, underst explains the terms and with examples. er successfuly passing lls and Num n) 5 | ands the material, d concepts supported the colloquia ot written merical grade (excellent) (very good) | connects and explains the texamples. Finds solutions Notes correlations with rel | terms and concepts supported with s that were not originally given. ated material. TS grade A B | | | |
| and oral exam 4.3. Final grade according to evaluation elements 4.3. Final grade according to | basic terms and how to apply or course with exa Final grade is det Percentage | concepts. Does not know explain the contents of the nples. ermined on the oral exam aft e of acquired knowledge, skil stences (teaching + final exam 90 - 100% 80 - 89,9% 65 - 79,9% | knowledge, underst explains the terms and with examples. er successfuly passing lls and Num n) 5 4 | ands the material, d concepts supported the colloquia ot written merical grade (excellent) (very good) 3 (good) | connects and explains the texamples. Finds solutions Notes correlations with rel | terms and concepts supported with s that were not originally given. ated material. TS grade A B C | | | |
| and oral exam 4.3. Final grade according to evaluation elements 4.3. Final grade according to | basic terms and how to apply or course with exa Final grade is det Percentage | concepts. Does not know explain the contents of the nples. ermined on the oral exam aft e of acquired knowledge, skill tences (teaching + final exam 90 - 100% 80 - 89,9% | knowledge, underst explains the terms and with examples. er successfuly passing lls and Num n) 5 4 2 (| ands the material, d concepts supported the colloquia ot written merical grade (excellent) (very good) | connects and explains the texamples. Finds solutions Notes correlations with rel | terms and concepts supported with s that were not originally given. ated material. TS grade A B | | | |



| 5. ADDITIONAL COURSE INFORMATION | | | | | | | |
|--|---|---------------------------------------|--|--|--|--|--|
| 5.1. Compulsory literature (available in the library and via | Title | Number of copies in the library | Availability via other media | | | | |
| 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. Šošić I.:Applied statistics, School book, Zagreb, 2004. Azcel A. Sounderpandian J.: Complete Business Statistics, McGraw Hill, 2009. 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. Patrick R. McMullen: Business statistics for professional studies [translated by Devčić, K., Perišić, A.], Polytechnic of Šibenik, 2017. Teaching materials on e-learning | 1 12 1 - 5 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 auther 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 class possible adjournment will be published in a timely manner on the e-learning site of the course and on the websit teachers during the consultation period (at least one hour per week), while for short questions and explanations to possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as so days after receiving the e-mail). | te of the Polytec hey can be conta | chnic. Students can contact acted during class. It is also | | | | |



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

| 1. GENERAL INFORMATION | | | | | | | |
|--|--|---|--|--|--|--|--|
| 1.1. Course title | INTERNAL TRANSPORT AND STORAGE | 1.8. Course code at ISVU | 140768 | | | | |
| 1.2. Course lecturer | Ana-Mari Poljičak, grad. eng. traff., 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes \Box no | | | | |
| 1.7. Credit point (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore 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 |
| | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. LO8: To solve problems in traffic by using analytical and/or graphical methods. |
| 2.3. Learning outcomes on the study programme level | LO9: To assess and organize processes in the area of road traffic and/or traffic logistics. LO10: To compare and choose technical and technological solutions in traffic and/or goods flows. LO11: To identify, predict and propose solutions in road traffic technology and technique. LO12: To set up a minor traffic process and critically evaluate it. |



| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | |
|--|--|---|--|--|--|--|--|
| 2.4. Expected learning outcomes on the course level | | Level of LO: | | | | | |
| | Learning outcomes according to Bloom's taxonomy: (maximum 2 werbs for LO) | memory, understanding, application, analysis, evaluation, synthesis. | | | | | |
| | 1. demonstrate knowledge and understanding of the content of the course by defining and describing the basic concepts in the internal transport and storage, | 1, 1 | | | | | |
| | 2. distinguish and choose types of warehouses, equipment and means of internal transport and storage according to the type of goods, | 2, 5 | | | | | |
| | 3. comment on goods flows and processes in the internal transport and storage, | 4 | | | | | |
| | 4. examine the storage capacity and utilization, | 4 | | | | | |
| | 5. distinguish between business benchmarks and uts costs, | 4 | | | | | |
| | 6. define and calculate the required number of pallets and forklifts, | 1, 3 | | | | | |
| | 7. use materials and tools to search scientific and professional literature in their native and English languages, | 3 | | | | | |
| | 8. connect the technological processes of internal transport and storage in production. | 6 | | | | | |

| | Cons | tructive allignement | | | | |
|---|------|---|---------------------|---|--|----------------|
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | Time needed |
| 2.5. Course content according to detailed curriculum schedule | | Introduction into the course and detailed plan. | - | They listen to a lecture. During the individual work on the computer, they are introduced to the course content and documents on the e- learning page of the course. | - | 1 h |
| | 1. | The term, goal, structure and function of internal transport. | 1, 6 | 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 define 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 teaching of exercises, the analytical method solves the tasks. | At the colloquium or the written and oral exam they can explain the traffic junctions and internal roads and explain the flow of materials in production and public warehouses. They know how to define and describe the basic concepts for calculating storage capacity and utilization of storage space. Calculate the usable storage area. | 6 h |
|----|---|---------|--|---|------|
| 3. | Types, designs and purposes of the warehouse. | 2, 4, 6 | They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks. | At the colloquium or the written and oral exam they can list and describe the types of warehouses and choose the type of warehouse according to the type of goods. Calculate storage capacity. | 12 h |
| 4. | Field teaching WINERY ŠIBENIK | 3, 6, 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. | At the colloquium or written and oral exam, they can explain 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 teaching of exercises, the analytical method solves the tasks. | At the colloquium or written and oral exam, they know how to define what warehouse equipment is, what it is used for and enumerate the technical- technological equipment of the | 6 h |



| 1 | | | | | | |
|----|----|--|---------|--|---|-----|
| | | | | | warehouse. They know how to calculate the area and volume of the ground floor warehouse and the area and free height of the warehouse floor at the floor warehouse. | |
| 6. | 5. | Field teaching PORT OF ŠIBENIK | 3, 6, 7 | They are listening to a lecture. (Tour of warehouses and docks, transhipment machinery, monitoring of storage and transhipment 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. | At the colloquium or written and oral exam, they can describe and explain internal transport and storage, as well as equipment for transhipment 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. | 4 h |
| 7. | 7. | Field teaching Impol-TLM Šibenik | 3, 6, 7 | They are listening to a lecture. (Tour of the factory and transhipment machinery. Introduction to the technological process of production, storage and warehousing of finished products and equipment). 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. | At the colloquium or written and oral exam, they can describe and explain the internal transport and storage in production, as well as the equipment and the method of controlling the quantity of goods. They know how to calculate the capacity of one-time storage of the warehouse and the total area of the warehouse. | 4 h |
| 8. | 3. | Economics of internal transport and storage. | 1, 4, 5 | They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks. | At the colloquium or written and oral exam, they know how to define the basic concepts for measuring and monitoring the performance of internal transport and storage operations, as well as the costs of internal transport and | 6 h |



| - | 9. | Repetition and preparation for the colloquium. Colloquium I. | 1, 2, 3, 4, 5 | They listen to lectures and read literature. They prepare individually for the colloquium. | storage by origin. They know how to calculate the required number and load capacity of a forklift. | 27 h |
|---|-----|---|---------------|---|---|------|
| | 10. | Information and communication system of the internal transport and storage. Designing the performance, location and reconstruction of the warehouse. Technical process of storage. | 1, 3, 4 | They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks. | At the colloquium or written and oral exam, they know how to define the information and communication system in internal transport and storage and list its elements. List the positive effects of electronic communication in internal transport and storage and explain the role of the information system in business decisions. They know how to define the term warehouse design and list the key elements for designing the construction or adaptation of a warehouse. State the principles of storage operation and storage procedures. They know how to calculate the storage capacity and the intensity of storage operations. | 7 h |
| | 11. | Means and tools for internal transport and storage. | 1, 2, 4 | They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks. | At the colloquium or written and oral exam, they know how to define, describe and differentiate the means for gripping, lifting, transferring, lowering and disposing of cargo. Know how to define, describe and differentiate means for internal transport of cargo and means for packing, unpacking and control of cargo. Calculate the required number of flat pallets. | 12 h |



| 1 | | | | | | |
|----------------------------|--|--|---------------|--|--|------|
| | 12. | Field teaching "MLINAR" factory in Šibenik | 3, 6, 7 | They are listening to a lecture. (Introduction to automation of technological processes. Storage 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. | At the colloquium or written and oral exam, they can describe and explain internal transport and storage and production automation. Calculate how many goods may be stacked on a flat pallet. | 4 h |
| | 13. | Design of internal transport and storage. | 2, 3, 4 | They listen to a lecture and read literature. In the teaching of exercises, the analytical method solves the tasks. | At the colloquium or written and oral exam, they can enumerate and describe the activities in the design of internal transport and storage in production and public warehouses, and enumerate the methods of placing goods in the warehouse. Calculate the required number of box pallets and how many goods are in the box pallets. | 5 h |
| | 14. | Repetition and preparation for the colloquium. Colloquium II. | 1, 2, 3, 4, 6 | They listen to lectures and read literature. They prepare individually for the colloquium. | - | 27 h |
| | 15. | Concluding considerations. Repeating and preparing for the exam. | - | They listen to a lecture and prepare individually for the exam. | - | 22 h |
| 3. EVALUATION OF STUDENT | WOR | K | | | | |
| 3.1. Students` obligations | In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: • From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; | | | | | |



| | More than 50% - students have the right to take the final exam. Students can pass the final exam in the course in two ways: a) during classes through continuous monitoring of students (active participation in c and two colloquia); b) during classes (active participation in classes) and taking exams (written and oral part of the exam). | | | | | | | | |
|---|---|---------------------------|----------------------------|-----------------------|---------------------------|--|--|--|--|
| | Attendance | | Written exam | 4 (without colloquia) | Project | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits 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 | 4 (without written exam) | Seminar paper | | Other | | | | |
| | Class activity | 0,5 | Oral exam | 0,5 | Other | | | | |
| | Student workload | on all bases is 1 ECTS cr | edit 30 semester hours and | is estimated as: | imated as: | | | | |
| 3.3. Student workload | Obligat | ion | | Hours (estimated) | Hours (estimated) | | | | |
| | 1. Active of | class attendance | | 60 | 60 | | | | |
| | 2. Preparin | ng colloquia or exams thr | ough individual work | 90 | 90 | | | | |

4. GRADING SYSTEM

| | Element of evaluation | Bad | Satisfying | Above average |
|---|-------------------------------|---|---|--|
| 4.1. Evaluation of a project assignment | 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 refer references | encing The sources are not li references do not fit the a cursory approach to topic. | e topic and show | bic and show and with errors. The references and | | | re and consistently listed. The references | | |
|--|--------------------------------------|---|---|--|-----------|--|--|--|--|
| | | Bad | | Satisfying | | | Above average | | |
| 4.2. Grading of the colloguium / written and oral exam | understanding. D terms and concep | memory, without a deeper loes not know or apply basic ts. Does not know how to apply contents of the course with | It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples. | | | Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and | | | |
| | Active | 70-75% of the presence | 76-86% of t | he presence | 87-100% o | f the presen | ce Case studies resolved | | |
| | attendance | 2 points | 4 po | ints | 7 | oints | 10 points | | |
| 4.3. Forming the final grade | Examination / | 2 | 3 | | | 4 | 5 | | |
| according to the evaluation | Written | Written 50-64,9% | | 65-79,9% | | 89,9% | 90-100% | | |
| elements | examination | 25 points | 30 points | | 35 points | | 40 points | | |
| | Oral part of the | 2 | 3 | 3 | | 4 | 5 | | |
| | exam | 25 points | 30 pc | oints | 35 | points | 40 points | | |
| | Percentage of act | quired knowledge, skills and con (teaching + final exam) | npetences | Number ratir | ıg | | ECTS grade | | |
| 4.4. Formation of final and | | 90 - 100% | | 5 (excellent | .) | | А | | |
| 4.4. Formation of final grade based on absolute distribution | | 80 - 89,9% | | 4 (very good | 1) | | В | | |
| based on absolute distribution | | 65 - 79,9% | | 3 (good) | | | С | | |
| | | 60-64,9% | | 2 (sufficient | t) | | D | | |
| | | 50-59,9% | | 2 (sufficient) | | | Е | | |



| | Title | Number of copies in the library | Availability via other media | | |
|---|--|--|---|--|--|
| 5.1. Required literature (available in the library and through other | Dundović Č., Hess S.: Internal transport and storage, Faculty of Maritime Studies, University of Rijeka, Rijeka, 2007. | 3 | | | |
| media) | Miloš I.: Internal transport and storage, Polytechnic of Rijeka, Rijeka, 2003. | 1 | | | |
| | 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 | | | |
| 5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program) | Prikril B., Božičević D.: Transhipment 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 possible adjournment will be published in a timely manner on the e-learning site of the course and on the teachers during the consultation period (at least one hour per week), while for short questions and expansion possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be working days after receiving the e-mail). | ne website of the Polytech planations they can be con | nic. Students can contact ntacted during class. It is | | |



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

| DN | | | | |
|---|--|---|--|--|
| LOGISTIC AND SUPPLY CHAINS | 1.8. Course code in ISVU | 214567 | | |
| Darijo Šego, univ. spec. traff., senior lecturer | 1.9. Course code in MOZVAG | | | |
| phD. Dijana Mečev, collegue professor | Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 0 + 15 + 0) | | |
| Undergraduate professional 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% | | |
| Obligatory | 1.12. Number of course revisions | 2 | | |
| 2 nd | 1.13. Modernization | X yes □ no | | |
| 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | |
| | | | | |
| identify and overcome processes in supply chain which mastering the modern logistics concepts and strategies. | are related to the storage, transport, purchase, stocks, retain | | | |
| Four year secondary equivation compreted, quantearion is | | | | |
| in Croatian and English. | | ication with the professional public | | |
| LO2: To organize and implement team work, and criticall | y judge the opinions and attitudes of team members. | | | |
| LO3: To individually and responsibly search, interpret and | d integrate the relevant literature needed to make decisions. | | | |
| LO5: To apply basic legal and economic principles in org | anization with socially responsible management in technical- | technological subjects. | | |
| LO6: To analyze and present relevant facts from the field | of traffic needed to reach conclusions. | | | |
| LO9: To assess and organize processes in the area of road | traffic and/or traffic logistics. | | | |
| | LOGISTIC AND SUPPLY CHAINS Darijo Šego, univ. spec. traff., senior lecturer phD. Dijana Mečev, collegue professor Undergraduate professional study of Traffic Obligatory 2 nd 5 The goal is to get students on the basis of theoretical know identify and overcome processes in supply chain which mastering the modern logistics concepts and strategies. Four-year secondary education completed; qualification le LO1: To apply and link professional terms from technolog in Croatian and English. LO2: To organize and implement team work, and criticall LO3: To individually and responsibly search, interpret an LO5: To apply basic legal and economic principles in org LO6: To analyze and present relevant facts from the field | LOGISTIC AND SUPPLY CHAINS 1.8. Course code in ISVU Darijo Šego, univ. spec. traff., senior lecturer 1.9. Course code in MOZVAG phD. Dijana Mečev, collegue professor Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) Undergraduate professional 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%) Obligatory 1.12. Number of course revisions 2 nd 1.13. Modernization 5 1.14. Percentage estimate of course changes and/or supplements The goal is to get students on the basis of theoretical knowledge and case studies: learn about the elements of the logis identify and overcome processes in supply chain which are related to the storage, transport, purchase, stocks, reta mastering the modern logistics concepts and strategies. Four-year secondary education completed; qualification level 4.2 according to the CROQF LO1: To apply and link professional terms from technology and organization of road traffic in written and oral commun | | |



| | L011 | : To identify, predict and propose sol | utions in road | traffic technology and technique. | | | | | |
|----------------------------------|-------|--|------------------|---|--------------------|-------------------|----------|--|--|
| | LO12 | LO12: To set up a minor traffic process and critically evaluate it. | | | | | | | |
| | LO13 | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | |
| | Learr | ning outcomes by Bloom: (maximum | n 2 werbs for L | .0) | | Level of LO: | | | |
| 2.4. Expected learning | | | | | | 1- memory, | | | |
| outcomes on the course level (4- | | | | | | 2- understanding, | | | |
| 10 learning outcomes) | | | | | | 3- application, | | | |
| | | | | | | 4- analysis, | | | |
| | | | | | | 5- evaluation, | | | |
| | | | | | | 6- synthesis. | | | |
| | 1 | . Define and differentiate basic term | ns and division | n in logistics and supply chain. | | 1, 2 | | | |
| | 2 | . Identify, explain, and analyze flow | ws in supply cl | nain and retail. | | 4, 2 | | | |
| | 3 | . Organize the procurement process | s and select the | e type of transportation for delivery. | | 6, 5 | | | |
| | 4 | . Identify similarities and difference | 4, 3 | | | | | | |
| | 5 | . Distinguish sales from demand an | 3, 5 | | | | | | |
| | 6 | . Indicate the participants and to dis | stinguish proce | esses in the system of reverse logistics. | | 1,4 | | | |
| | 7 | . Use materials and tools to search | ch the scienti | fic and professional literature in their native | tive and English 3 | | | | |
| | | languages. | | | | 5 | | | |
| | 8 | . Present the acquired knowledge, i | deas, problem | s, and solutions independently and in a team. | | 6 | | | |
| 2.5. Course content according to | Const | tructive allignement | | | | | | | |
| detailed curriculum schedule | | | | | I | | <u> </u> | | |
| | No | Thematic unit | LO of the | Content/teaching methods | | Evaluation | Time | | |
| | 1 | Introductory presentation | course | Listening to the lecture. In the course of | | | needed | | |
| | 1. | Introductory presentation (introducing students to the course | | seminars, they are introduced to the course | | | | | |
| | | content and obligations) | _ | content and documents on the e-learning page | | _ | 2 h | | |
| | | content and obligations) | _ | of the course by working independently on a | | - | 2 11 | | |
| | | | | computer. | | | | | |
| | | The term of Logistics (term They listen to a lecture and read literature At the colloquium or the write | | | | | | | |
| | 2. | The term of Logistics (term, developmental factors, elements of 1, 7, 8 They listen to a lecture and read literature. At the colloquium or the written and They use multimedia and network. At the oral exam, students know how to | | | | | | | |



| 1 | | | | | | |
|---|----|-------------------------------------|------------|---|---------------------------------------|-----|
| | | the logistics system, logistics | | seminar class, they individually explore the | define and distinguish basic | |
| | | system division) | | content of this topic area by searching the | concepts in logistics, types of | |
| | | | | database, and on the basis of it and reading | logistics, factors of logistics | |
| | | | | the literature, create a seminar paper that | development. Seminar paper created | |
| | | | | presents the acquired knowledge and presents | and presented (by computer | |
| | | | | their own ideas, and ways to solve problems. | programs). | |
| | 3. | The term of Supply chain | | They listen to a lecture and read literature. | At the colloquium or the written and | |
| | | (concept, jobs, goal, structure, | | They use multimedia and network. At the | oral exam, students know how to | |
| | | information technologies, e- | | seminar class, they individually explore the | define the basic terms of Supply | |
| | | commerce) | | content of this topic area by searching the | chain. List the tasks that are | |
| | | | | database, and on the basis of it and reading | performed in the supply chain. To | |
| | | | 1, 7, 8 | the literature, create a seminar paper that | divide the functional stages and | 5 h |
| | | | | presents the acquired knowledge and presents | cycles. Distinguish information | |
| | | | | their own ideas, and ways to solve problems. | technologies for the supply chain | |
| | | | | | management. Explain E-commerce. | |
| | | | | | Seminar paper created and presented | |
| | | | | | (by computer programs). | |
| | 4. | Purchase in the supply chain (goal, | | They listen to a lecture and read literature. | At the colloquium or the written and | |
| | | organization and processes, types | | They use multimedia and network. At the | oral exam students know how to | |
| | | of purchase, purchase system Just | | seminar class, they individually explore the | define the basic terms of purchase. | |
| | | in time) | | content of this topic area by searching the | Indicate the goal and purpose of the | |
| | | | 1, 3, 7, 8 | database, and on the basis of it and reading | purchase. Distinguish and explain | 5 h |
| | | | | the literature, create a seminar paper that | the processes in purchase. Explain | |
| | | | | presents the acquired knowledge and presents | the purchase system Just in time. | |
| | | | | their own ideas, and ways to solve problems. | Seminar paper created and presented | |
| | | | | | (by computer programs). | |
| | 5. | Inventories (stocks) in the supply | | They listen to a lecture and read literature. | At the colloquium or written and | |
| | | chain (term, concept, function, | | They use multimedia and network. At the | oral exam, they know the concept of | |
| | | types, management strategies, | | seminar class, they individually explore the | stock. Explain the function of stocks | |
| | | costs) | 3, 4, 7, 8 | content of this topic area by searching the | in the supply chain. Distinguish and | 5 h |
| | | | | database, and on the basis of it and reading | categorize stock types. List and | |
| | | | | the literature, create a seminar paper that | comment on inventory management | |
| | | | | | strategies. Categorize and break | |
| | | | | | | |



| 8. Logistics centers (term, concept, types, warehouse management system) 1, 5, 7, 8 They listen to a lecture and read literature. At the solution of this topic area by searching 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 identify and differentiate costs in forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Critically judge types of demand. Analyze, compare and evaluate methods for forecasting demand. Critically judge types of demand. Critically judge types of demand. Critically judge types of demand. Seminar paper created and presented (by computer programs). 5 h 7. Logistics centers (term, concept, types, warehouse management system) They listen to a lecture and read literature. At the colloquium or written and presented (by computer programs). At the colloquium or written and presented (by computer programs). 8. Logistics centers (term, concept, types, warehouse management system) They listen to a lecture and read literature. They uses not a lecture and read literature, create a seminar paper that presents the acquired knowledge and presents the acquired knowledge and presents the acquired knowledge and presents their own ideas, and ways to solve problems. 5 h | 1 | | | | | | |
|---|---|----|-----------------------------------|------------|--|--------------------------------------|------|
| 6. Demand management in the supply chain (role and cost forecasting, methods and factors for prediction) They listen to a lecture and read literature. At the colloquium or written and the seminar class, they individually explore the content of this topic area by searching 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 to identify and differentiate costs in forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Critically judge types of demand. Seminar paper that presents the acquired knowledge and presente (by computer programs). 5 h 7. Logistics centers (term, concept, types, warehouse management system) 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 iterature, create a seminar paper that presents the could and network. At the seminar class, they individually explore the tore of Logistics Center. Explain the role of the logistics center in the supply chain. the ir own ideas, and ways to solve problems. 5 h 7. Logistics centers (term, concept, types, warehouse management system) 1, 5, 7, 8 They listen to a lecture and read literature. They use multimedia and network. At the colloquium or written and tratabase, and on the basis of it and reading the iterature, 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 the term of Logistics centers. Highlight the advantages of using a warehouse management system. Identify and plan key busineses processes. Seminar pap | | | | | | down inventory holding costs. | |
| 6. Demand management in the supply chain (role and cost forecasting, methods and factors for prediction) They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching 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 identify and differentiate costs in forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Analyze, it he 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 identify and differentiate costs in forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Seminar paper created and presented (by computer programs). 5 h 7. Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system) 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 literature, create a seminar paper that presents the acquired knowledge and presents the advantages of using a warehouse management system. Identify and plan key business processes. Seminar paper created and presented (by computer programs). 5 h | | | | | their own ideas, and ways to solve problems. | 1 1 1 | |
| supply chain (role and cost forecasting, methods and factors for prediction)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 their own ideas, and ways to solve problems.oral exam, they know how to identify and differentiate costs in forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Critically judge types of demand. Seminar paper reated and presented (by computer programs).5 h7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)They listen to a lecture and read literature, create a seminar paper that be literature, create a seminar paper that presents the acquired knowledge and presents the information of this topic area by searching the atabase, and on the basis of it and reading the literature, create a seminar paper that be literature, create a seminar paper that presents the acquired knowledge and presents the information of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that be literature, create a seminar paper that the irrown ideas, and ways to solve problems.At the colloquium or written and real exam, they know how to define the term of Logistics center. Explain the role of the logistics center. 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 | | | | | | (by computer programs). | |
| forecasting, methods and factors for prediction)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 problemsidentify and differentiate costs in forecasting demand. Analyze, compare and evaluate methods for forecasting demand. Seminar paper types of demand. Seminar paper created and presented (by computer programs).5 h7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)They listen to a lecture and read literature, content of this topic area by searching the been interature, create a seminar paper that their own ideas, and ways to solve problemsAt the colloquium or written and oral exam, they know how to define the term of Logistics centers. Highlight the advantages of using a warehouse management system. Identify and plan key business processes.5 h | | 6. | Demand management in the | | They listen to a lecture and read literature. At | At the colloquium or written and | |
| for prediction)2, 5, 7, 8database, 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).5 h7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore 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 | | | supply chain (role and cost | | the seminar class, they individually explore | oral exam, they know how to | |
| 2, 5, 7, 8the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.compare and evaluate methods for forecasting demand. Critically judge types of demand. Seminar paper created and presented (by computer programs).5 h7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)They listen to a lecture and read literature. They use multimedia and network. At the colloquium or written and role to this topic area by searching 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 | | | forecasting, methods and factors | | the content of this topic area by searching the | identify and differentiate costs in | |
| Image: series of the series of the supply chain, development goals, functions, types, warehouse management system)They listen to a lecture and read literature. They use multimedia and network. At the collequient of this topic area by searching the iterature, create a seminar paper that presents the acquired knowledge and presents the acquired knowledge and presents the acquired knowledge and presents the acquired and network. At the seminar class, they individually explore 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 presents their own ideas, and ways to solve problems.Sh | | | for prediction) | | database, and on the basis of it and reading | forecasting demand. Analyze, | |
| 7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)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 | | | | 2, 5, 7, 8 | the literature, create a seminar paper that | compare and evaluate methods for | 5 h |
| 7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)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 literature, create a seminar paper that presents the acquired knowledge and presents the ir 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 | | | | | presents the acquired knowledge and presents | forecasting demand. Critically judge | |
| 7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore 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 | | | | | their own ideas, and ways to solve problems. | types of demand. Seminar paper | |
| 7.Logistics centers (term, concept, role in the supply chain, development goals, functions, types, warehouse management system)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 literature, create a seminar paper that the literature, create a seminar paper that 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 | | | | | | created and presented (by computer | |
| role in the supply chain, development goals, functions, types, warehouse management system) 1, 5, 7, 8 number of the logistics the iterature, create a seminar paper that their own ideas, and ways to solve problems. number of the logistics center. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the iterature, create a seminar paper that their own ideas, and ways to solve problems. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the iterature, create a seminar paper that their own ideas, and ways to solve problems. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the iterature, create a seminar paper that their own ideas, and ways to solve problems. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the iterature, create a seminar paper that their own ideas, and ways to solve problems. They use multimedia and network. At the seminar class, they individually explore the the iterature, create a seminar paper that their own ideas, and ways to solve problems. They use multimedia and network at the seminar class of using a warehouse management system. Identify and plan key business processes. Seminar paper created and presented (by computer programs). | | | | | | programs). | |
| development goals, functions, types, warehouse management system) 1, 5, 7, 8 development goals, functions, types, warehouse management system) 1, 5, 7, 8 database, and on the basis of it and reading the literature, create a seminar paper that their own ideas, and ways to solve problems. Iter their own ideas, and ways to solve problems. Seminar paper created and presented (by computer programs). | | 7. | Logistics centers (term, concept, | | They listen to a lecture and read literature. | At the colloquium or written and | |
| types, warehouse management system) 1,5,7,8 tortent 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. their own ideas their own | | | role in the supply chain, | | They use multimedia and network. At the | oral exam, they know how to define | |
| system) 1, 5, 7, 8 1, 6, 7, 8 1, 7, | | | development goals, functions, | | seminar class, they individually explore the | the term of Logistics Center. | |
| 1, 5, 7, 8the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.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 | | | types, warehouse management | | content of this topic area by searching the | Explain the role of the logistics | |
| 1, 5, 7, 8 presents the acquired knowledge and presents 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). Seminar paper created and presented (by computer programs). | | | system) | | database, and on the basis of it and reading | center in the supply chain. | |
| presents the acquired knowledge and presents their own ideas, and ways to solve problems. Their own ideas are provided to solve provide | | | | 1570 | the literature, create a seminar paper that | Distinguish and categorize the types | 5 h |
| management system. Identify and plan key business processes. Seminar paper created and presented (by computer programs). | | | | 1, 3, 7, 8 | presents the acquired knowledge and presents | of logistics centers. Highlight the | 5 11 |
| plan key business processes. Seminar paper created and presented (by computer programs). | | | | | their own ideas, and ways to solve problems. | advantages of using a warehouse | |
| Seminar paper created and presented (by computer programs). | | | | | | management system. Identify and | |
| (by computer programs). | | | | | | plan key business processes. | |
| | | | | | | Seminar paper created and presented | |
| 8. Logistics centers (term, concept, They listen to a lecture and read literature. At the colloquium or written and | | | | | | (by computer programs). | |
| | | 8. | Logistics centers (term, concept, | | They listen to a lecture and read literature. | At the colloquium or written and | |
| role in the supply chain, They use multimedia and network. At the oral exam, they know how to define | | | role in the supply chain, | | They use multimedia and network. At the | oral exam, they know how to define | |
| development goals, functions, seminar class, they individually explore the the term of Logistics Center. | | | development goals, functions, | | seminar class, they individually explore the | the term of Logistics Center. | |
| types, warehouse management content of this topic area by searching the Explain the role of the logistics | | | types, warehouse management | | content of this topic area by searching the | Explain the role of the logistics | |
| system) 1, 5, 7, 8 database, and on the basis of it and reading center in the supply chain. 5 h | | | system) | 1, 5, 7, 8 | database, and on the basis of it and reading | center in the supply chain. | 5 h |
| the literature, create a seminar paper that Distinguish and categorize the types | | | | | the literature, create a seminar paper that | Distinguish and categorize the types | |
| presents the acquired knowledge and presents of logistics centers. Highlight the | | | | | presents the acquired knowledge and presents | of logistics centers. Highlight the | |
| their own ideas, and ways to solve problems. advantages of using a warehouse | | | | | their own ideas, and ways to solve problems. | advantages of using a warehouse | |
| management system. Identify and | | | | | | management system. Identify and | |



| | 1 | 1 | | | |
|-----|-------------------------------------|---------|---|--|------------|
| | | | | plan key business processes. | |
| | | | | Seminar paper created and presented | |
| | | | | (by computer programs). | |
| 9. | Transport in the supply chain | | They listen to a lecture and read literature. | At the colloquium or written and | |
| | (road, rail, air, and internal | | They use multimedia and network. At the | oral exam, students know isolate | |
| | transport and transmission, costs | | seminar class, they individually explore the | types of transportation in the supply | |
| | in transport, shipping documents) | | content of this topic area by searching the | chain, in all branches of transport. | |
| | | 3, 7, 8 | database, and on the basis of it and reading | Identify the advantages, | 5 h |
| | | 5, 7, 8 | the literature, create a seminar paper that | disadvantages and costs of | 5 11 |
| | | | presents the acquired knowledge and presents | transportation. Suggest the type of | |
| | | | their own ideas, and ways to solve problems. | transport for individual goods. | |
| | | | | Seminar paper created and presented | |
| | | | | (by computer programs). | |
| 10. | Transport in the supply chain | | They listen to a lecture and read literature. | At the colloquium or written and | |
| | (road, rail, air, and internal | | They use multimedia and network. At the | oral exam, students know isolate | |
| | transport and transmission, costs | | seminar class, they individually explore the | types of transportation in the supply | |
| | in transport, shipping documents) | | content of this topic area by searching the | chain, in all branches of transport. | |
| | | 2 7 9 | database, and on the basis of it and reading | Identify the advantages, | 5 1 |
| | | 3, 7, 8 | the literature, create a seminar paper that | disadvantages and costs of | 5 h |
| | | | presents the acquired knowledge and presents | transportation. Suggest the type of | |
| | | | their own ideas, and ways to solve problems. | transport for individual goods. | |
| | | | | Seminar paper created and presented | |
| | | | | (by computer programs). | |
| 11. | Modern transport technologies | | They listen to a lecture and read literature. | At the colloquium or the written and | 5 h |
| | (conditions for development, | | They use multimedia and network. At the | oral exam, students know how to | |
| | integral transport, technologies on | | seminar class, they individually explore the | isolate and analyze transport | |
| | the road, rail, water, and air | | content of this topic area by searching the | technologies in the road, rail, water, | |
| | transport) | 2 7 0 | database, and on the basis of it and reading | and air transport. Compare, identify | |
| | · · | 3, 7, 8 | the literature, create a seminar paper that | similarities/differences in the | |
| | | | presents the acquired knowledge and presents | transportation of products with | |
| | | | their own ideas, and ways to solve problems. | modern transportation technologies. | |
| | | | · • • | Seminar paper created and presented | |
| | | | | (by computer programs). | |
| 1 | | I | I | Y J F T F O T T/ | |



| 1 | | | | | | |
|---|-----|---|---------------|--|---|-----|
| | 12. | Logistics in retail (concept, types of stores, logistics processes in retail) | 2, 6, 7, 8 | They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | 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 |
| | 13. | Reverse logistics (concept, goal, carriers, recycling, design of return logistics system) | 6, 7, 8 | They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | 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 |
| | 14. | Study trip to LIDL Logistics- distribution center (located in Perušić). | 1, 2, 3, 5, 6 | - | On a study tour, students will be able to define and differentiate basic terms and divisions in logistics, warehousing, and freight forwarding. Select, evaluate and categorize services in the warehouse business. Compare and connect modes of product transport, organization of distribution of products. Suggest ways of manipulation with the products and reducing inventory costs. | 8 h |



| | | | | | | | | | | | 0.0.1 |
|---|--------|---|--------------|----------------------------------|-----------------|---|---|----------------------|---------------------------|-----------------|-------------|
| | 15. | | | tions/Repeating | - | • | | lecture and prepare | _ | | 80 h |
| | | and prepar | aring for th | ne exam. | | individuals for the | e exam. | | | | |
| 3. EVALUATION OF STUD | DENT V | WORK | | | | | | | | | |
| 3.1. Student obligations | In acc | n 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-t | time student | ts are requ | uired to attend a | class of at le | st 50%. All student | ts must c | create, present and | positively colloquy semi | nar papers. Stu | dents who |
| | | | - | | | | | | earn ECTS credits, and | | |
| | | | - | | | | | | exam (test). Written ex | | |
| | | | | | | | | | tudents can take the fina | | |
| | - | | • | - | | - | | | ion in classes and throug | | |
| | | | | part of the exam | | | | | | | -) F8 |
| 3.2. Student work monitoring | | ending class | | 1 | | Written exam | | 1 (without | Project | | |
| (enter the share of ECTS credits | | | | - | | | | colloqiums) | 110,000 | | |
| for each activity so that the total | Exp | erimental w | vork | | | Research | | conoquants) | Practical work | | |
| number of ECTS credits | | Esaay | | | | Report | | | Continuous check | | |
| corresponds to the course credit value) | (| Colloquiums | IS | 1 (without writte | en part of | Seminar paper | : | 0,5 | (other) | | |
| (ulue) | | | | exam) | | | | | | | |
| | Tea | ching activi | ities | 1 | | The oral part of ex | xam | 0,5 | (other) | | |
| 3.3. Student work-load | Stude | ent workload | d on all ba | ses is 1 ECTS cre | edit for 30 ser | nester hours and is as | ssessed a | as attendance (45 ho | urs), preparation of semi | nar work and pr | esentation |
| | | | | | | lf-study (90 hours). | | × × | | 1 | |
| 4. GRADING SYSTEM | | // I I | | | U | | | | | | |
| 4.1. Evaluation of seminar paper | 1 | Elements of | f | Bad | 1 | | Satisfyiı | nσ | Above | average | |
| | | evaluation | | Dut | - | | outibiyi | | | uteruge | |
| | | Drganization | | he paper is not | organized in | a The paper is we | ell struct | tured with a clear | The paper is well s | tructured with | n a clear |
| | | JI GuillZution | | gical order and | - | | | | distinction between th | | |
| | | | 10 | great order and i | lucks structur | | . distinction between the introduction, the distinction between the introduction, the main body of the text and the conclusion. body of the text and the conclusion, where the introduction is the text and the conclusion. | | | | |
| | | | | | | body of the text and the conclusion. body of the text and the conclusion, which logically interconnected. | | | which are | | |
| | Torn | ninolog, wri | riting W | Vords and expres | sions ara not | n Words and avn | | | | | th official |
| | | style | | ne with official | | 1 | Words and expressions are in line with Words and expressions are aligned v official terminology. The writing style is terminology and show an understand | | | U | |
| | | Style | | he writing s | - | | ••• | ence structure is | meaning. The writing | | - |
| | | | | opropriate, the | • | | | s appropriate and | sentences are clear and | - | |
| | | | - | ppropriate, the bolong, of a mod | | | • | | rich and there are no gr | | • |
| | | | 10 | o long, of a mod | iest vocabula | y unere are rew gr | ammatic | ai cituis. | rich and mere are no gr | ammatical error | 13. |



| 1 | | | | | | | |
|-----------------------------------|--------------------------------------|-------------------------------------|-------------------------------|-----------------|--|------------------------------|--|
| | | and with frequent and repeated | | | | | |
| | | grammatical errors. | | | | | |
| | Citing and | The sources are not listed at all. | The sources are listed but in | ncomplete and | The sources are acc | curately, completely and | |
| | referencing | The references do not fit the | with errors. The references | are relevant to | consistently listed. | The references are | |
| | references | topic and show a cursory | the topic and show a satisfa | ctory research | appropriate, their | list is "rich" and | |
| | | approach to exploring the topic. | attitude. | - | comprehensive and sl | nows a detailed research | |
| | | | | | approach. | | |
| 4.2. Gradeing of the | | Bad | Satisfying | | Above | e average | |
| colloquium/written and oral | It responds by memory | , without a deeper understanding. | It reproduces the basic | concepts and | Knowledge is at the le | evel of analysis, synthesis, | |
| exam | | y basic terms and concepts. It does | - | nparts new | - | observes the legality, | |
| | | y or explain the contents of the | knowledge, understands | - | | hly explains the content of | |
| | course with examples. | y or explain the contents of the | explains the terms and co | | | ally connects and explains | |
| | course with examples. | | supports with examples. | neepts that h | <u> </u> | ots that it supports with | |
| | | | supports with examples. | | | lutions that were not | |
| | | | | | originally given. It notes correlations with related | | |
| | | | | | material. | is correlations with related | |
| 4.3. Forming the final grade | Active attendance on | | | | | Mental map created, | |
| according to the evaluation | class | 70-75% attendance | 76-86% attendance87 | | 0% attendance | Case studies resolved | |
| elements | Cluss | 2 points | | 4 points | | 7 points 3 points | |
| | | 2 | 3 | | 4 | 5 | |
| | Seminar paper | 5 points | 7 points | | 8 points | 10 points | |
| - | | 2 | 3 | | 4 | 5 | |
| | Colloquiums/ | 50 - 64,9% | 65 - 79,9% | 80 - 89,9% | | 90 - 100% | |
| | Written part of exam | | | | | | |
| - | | 25 points | 30 points | | 35 points | 40 points | |
| | Oral part of exam | 2 | 3 | | 5 | 5 | |
| | _ | 25 points | 30 points | | 35 points | 40 points | |
| 4.4. Formation of the final grade | • | uired knowledge, skills and | Numerical grad | le | ECT | 'S grade | |
| based on the absolute | competencies (teaching + final exam) | | | | | | |
| distribution | | 90 - 100% | 5 (excellent) | | | А | |
| | 8 | 80 - 89,9% | 4 (very good) | 1 | | В | |
| | | | 3 (good) | | С | | |



| | 60 - 64,9% | 2 (sufficient) | | D | |
|--|---|--|---------------------------------|---------------------------------------|--|
| | 50 - 59,9% | 2 (sufficient) | | E | |
| 5. ADDITIONAL INFORMATI | ON ABOUT COURSE | | | | |
| 5.1. Compulsory literature (available in the library and via | Title | | Number of copies in the library | Availability via other media | |
| other media) | Ivakovic C., Stankovic R., Šafran M.: Freight Forwarding transport and traffic sciences, University of Zagreb, Zagre | e . | - | City of Sibenik library | |
| | Prester J.: Supply chain management, Sinergija, Zagreb, 2 | 012. | 2 | | |
| | Zelenika R.: Logistics systems, Faculty of Economics, Un chapters) | iversity of Rijeka, Rijeka, 2005 (selected | 2 | | |
| | Bloomberg D.: Logistics, MATE, Zagreb School of Econo (selected chapters) | - | City of Sibenik library | | |
| | Crkvenčić M., Buntak K., Krpan Lj.: Supply chain man 2018. | 2 | | | |
| | Regodić D.: LOGISTICS Supply chains, University of Sir | | PDF (Internet website) | | |
| | Segetlija Z .: Logistic processes in trade, Faculty of Econo | omics, University of Osijek, Osijek, 2012. | 3 | | |
| 5.2. Additional literature (at the | Teaching materials from course lectures | | | | |
| moment of changes and/or amended of study programme) | Logistics <u>www.logistika.com.hr</u> Trade law Dujak Davor, lectures from the courses "Supply Chain Ma Faculty of Economics, Osijek, 2020. | anagement" and "Logistics in Trade", | | e-learning system Internet website | |
| 5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences | attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and oblig as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from Croatian employment service on the annual state of student employment, surveys from employers and Alumni association. | | | | |
| 5.4. Informing about the course 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 adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact 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 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 works after receiving the e-mail). | | | | |





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

| 1. GENERAL INFORMATION | | | | | | | | |
|---|---|---|---|--|--|--|--|--|
| 1.1. Course lecturer title | ENGLISH LANGUAGE III | 1.8. Course code in ISVU | 140775 | | | | | |
| 1.2. Course title lecturer | MSc. Ivana Kardum Goleš, 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) | (15 + 30 + 0 + 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | |
| 2. COURSE DESCRIPTION | | · | | | | | | |
| 2.1. Course objectives The aim of the course is to expand the vocabulary related to road and postal traffic as well as predicted grammatical structures that include tenses, the creation and use of passives, causative constructions, mastery of conditional sentences, transformation of direct into reported speech in the past. The aim is also to expand the vocabulary related to traffic, while exercises determine and practice grammar and new vocabulary. Another goal of the course is to write different kinds of business letters. By attending a foreign language classes, students are introduced with new communication systems, enabling their easier and more direct involvement in world events and getting acquainted with the elements of English culture and civilization of the English speaking world. Learning a foreign language is in line with the aspiration to preserve the richness of the diversity of multi-faceted Europe as well as with fostering the development of the culture of dialogue and civilization. | | | | | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualifi | ication level 4.2 according to the CROQF, Completed course | English language II | | | | | |
| 2.3. Learning outcomes on the study programme level | LO1: To apply and link professional terms from te in Croatian and English. | echnology and organization of road traffic in written and oral of | communication with the professional public | | | | | |



| | LO2: 7 | To organize and implement team | n work, and c | ritically judge the opinions and attitude | s of team members. | | |
|---|----------|--|------------------|--|--|--|----------------|
| | LO3: 7 | Γo individually and responsibly | search, interp | oret and integrate the relevant literature | needed to make decisions. | | |
| | Lear | ning outcomes accroding to the | e Bloom`s tax | onomy: (up to two verbs per LO) | | Level of LO: 1- rememberin, 2- understandi, 3- application, 4- analysis, 5- evaluation, 6- synthesis | • |
| | | written and oral communica | tion | the professional terminology of English | h road traffic and use them in | 2, 3 | |
| | | to apply grammatical structure to interpret and use tenses in | | = | | 3,4 | |
| | _ | 4. to develop a longer essay wi | | | | 5, 6 | |
| | 5 | 5. to present own ideas for dev | - | | | 3 | |
| | 6 | - | | thin the subjects of the course, to expre | ss one own opinions | 6 | |
| | | 7. to compare and evaluate dif | | solutions | | 5 | |
| | | 3. to analyse complex texts and | | | | 4 | |
| | <u> </u> | b. to use part of the general lar | iguage compe | etency at levels B1/B2 | | 6 | |
| | Cons | tructive allignement | | | | | |
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | | Time needed |
| 2.5. Course content according to detailed curriculum schedule | 1. | Introduction into the course and detailed plan. | _ | Listen to lectures. Work independently on computer, get to know course content and elearning documents. | - | | 2 h |
| | 2. | Britains Earliest Roads – Tenses | 1, 2, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and applied grammatical structures o are evaluated, understand, apply from the professional terminol road traffic and use them in y | n texts and tasks y and link terms ogy of English | 4 h |



| | | | | communication verb tenses are interpreted in a | | |
|----|----------------------------|-------------|---|--|-----|--|
| | | | | real linguistic context, use part of other language | | |
| | | | | competences at B1 level. | | |
| | | | | In colloquium or written and oral exams the | | |
| | | | | applied grammatical structures on texts and tasks | | |
| | | | | are evaluated, verb tenses are interpreted in a real | | |
| | | | | linguistic context, can communicate in foreign | | |
| | | | Listen to lectures and read literature. | languages within the course topic, express their | | |
| 2 | The Age Of Bad Roads - The | 1, 2, 3, 4, | Use multimedia and internet. Solve | own opinions, present their own ideas related to | 4.1 | |
| 3. | Passive Voice | 9 | exercises. | the development of transport solutions to develop | 4 h | |
| | | | | a longer essay within course topics, comparing | | |
| | | | | and evaluating different solutions in the traffic of | | |
| | | | | other countries, analyze medium complex texts | | |
| | | | | and solve tasks, use part of other language | | |
| | | | | competences at B1 level. | | |
| | | | | In colloquium or written and oral exams the | | |
| | | | | applied grammatical structures on texts and tasks | | |
| | | | | are evaluated, verb tenses are interpreted in a real | | |
| | | | | linguistic context, can communicate in foreign | | |
| | | | | languages within the course topic, express their | | |
| | Roads And The Church - | | Listen to lectures and read literature. | own opinions, present their own ideas related to | | |
| 4. | The Passive Voice, Present | 1, 2, 3, 9 | Use multimedia and internet. Solve | the development of transport solutions to develop | 4 h | |
| | times | | exercises. | a longer essay within course topics, comparing | | |
| | | | | and evaluating different solutions in the traffic of | | |
| | | | | other countries, analyze medium complex texts | | |
| | | | | and solve tasks, use part of other language | | |
| | | | | competences at B1 level. | | |
| | | | | In colloquium or written and oral exams the | | |
| | | | Listen to lectures and read literature. | applied grammatical structures on texts and tasks | | |
| | Early Carriages - The | 1, 2, 3, 6, | Use multimedia and internet. Solve | are evaluated, verb tenses are interpreted in a real | | |
| 5. | Passive Voice, Past times | 9 | exercises. | linguistic context, can communicate in foreign | 4 h | |
| | | <i>,</i> | | languages within the course topic, express their | | |
| | | | | own opinions, present their own ideas related to | | |
| | | | | s and opinions, present area of an racus related to | | |



| | | | | | the development of transport solutions to develop | |
|---------------------------------------|-----------|----------------------------|-------------|---|--|------|
| | | | | | a longer essay within course topics, comparing | |
| | | | | | and evaluating different solutions in the traffic of | |
| | | | | | other countries, analyze medium complex texts | |
| | | | | | and solve tasks, use part of other language | |
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | | | | applied grammatical structures on texts and tasks | |
| | | | | | are evaluated, verb tenses are interpreted in a real | |
| | | | | | linguistic context, can communicate in foreign | |
| | | Trade And Transport In The | | Listen to lectures and read literature. | languages within the course topic, express their | |
| e e e e e e e e e e e e e e e e e e e | 6. | Turnpike Era - The Passive | 1, 2, 3, 5, | Use multimedia and internet. Solve | own opinions, present their own ideas related to | 4 h |
| | 0. | Voice, Future times | 6, 9 | exercises. | the development of transport solutions to develop | |
| | | voice, i uture times | | | a longer essay within course topics, comparing | |
| | | | | | and evaluating different solutions in the traffic of | |
| | | | | | other countries, analyze medium complex texts | |
| | | | | | and solve tasks, use part of other language | |
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | | | | applied grammatical structures on texts and tasks | |
| | | | | Listen to lectures and read literature. | are evaluated, verb tenses are interpreted in a real | |
| | | | | During lectures individually | linguistic context, can communicate in foreign | |
| | | | | research the content of this thematic | languages within the course topic, express their | |
| | 7. | Rivers And River Transport | 1, 2, 3, 5, | field by searching data bases, | own opinions, present their own ideas related to | 6 h |
| · · · · · · · · · · · · · · · · · · · | <i>,.</i> | - The Passive Voice | 6, 9 | presentt acquired knowledge, | the development of transport solutions to develop | 0 11 |
| | | | | express their own ideas and ways of | a longer essay within course topics, comparing | |
| | | | | problem solving. Brainstorming, | and evaluating different solutions in the traffic of | |
| | | | | discussion. Solve exercises. | other countries, analyze medium complex texts | |
| | | | | | and solve tasks, use part of other language | |
| | | | | | competences at B1 level. | |
| | | The World Of Transport - I | 1, 2, 3, 5, | Listen to lectures and take part in | In colloquium or written and oral exams the | |
| 8 | 8. | colloquium | 6, 9 | discussion. Write the colloquium. | applied grammatical structures on texts and tasks | 10 h |
| | | conoquium | 0, 7 | alsoussion. White the conoquium. | 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. | |
|-----|--|---------------------|--|---|-----|
| 9. | The Satellite - The Infinitive and the Gerund | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate 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, 9 | Listen to lectures and read literature. Solve exercises. Discuss. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 6 h |



| 1 | | | | | | |
|---|-----|--|---------------------------------|--|---|------|
| | 11. | Transport, Communications And City Organisation - Conditional Sentences (II Type) | 1, 2, 3, 5, 6, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| | 12. | Navigation Devices - Conditional Sentences (III Type) | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| | 13. | Safe And Clean Road Transport - Conditional Sentences (Mixed Types) | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own ideas and ways of problem solving. Brainstorming, discussion. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of | 4 h |



| | | | | | other countries, analyze medium complex texts and solve tasks, use part of other language | |
|----------------------------|--------|-----------------------------------|----------------------------|--|---|-------------|
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | | | Listen to lectures and read literature. | applied grammatical structures on texts and tasks | |
| | | | | | are evaluated, verb tenses are interpreted in a real | |
| | | | | During lectures individually research the content of this thematic | linguistic context, can communicate in foreign | |
| | | | 1, 2, 3, 4, | field by searching data bases, | languages within the course topic, express their | |
| | 14. | Scientific Road Making - | 1, 2, 3, 4, 5, 6, 7, 8, | presentt acquired knowledge, | own opinions, present their own ideas related to | 6 h |
| | 14. | Conditional Sentences | 9 9 | express their own ideas and ways of | the development of transport solutions to develop | 0 11 |
| | | | , | problem solving. Brainstorming, | a longer essay within course topics, comparing | |
| | | | | discussion. Solve exercises. | and evaluating different solutions in the traffic of | |
| | | | | | other countries, analyze medium complex texts | |
| | | | | | and solve tasks, use part of other language | |
| | | | | | competences at B1 level. | |
| | | | | | In colloquium or written and oral exams the | |
| | | | | | applied grammatical structures on texts and tasks | |
| | | | | | are evaluated, verb tenses are interpreted in a real | |
| | | | | | linguistic context, can communicate in foreign | |
| | | | 1, 2, 3, 4, | | languages within the course topic, express their | |
| | 15. | Revision – II colloquium | 5, 6, 7, 8, | Solve exercises. | own opinions, present their own ideas related to | 10 h |
| | | | 9 | | 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. | |
| | | | | | | |
| 3. EVALUATION OF STUDEN | | | | | | |
| | | | | | nent and Evaluation: for all full-time students attend | |
| 3.1. Students' obligations | | - | - | | idents` acquired knowledge is tested during the cour | |
| conguines conguines | - | • | | • | g process, with particular attention being paid to th | |
| | active | participation in teaching as well | l as his/her p | resentation of the written work that the | student produces for homework. Of particular impo | ortance for |
| | | | | | | |



| | from the written part of learning outcomes are: inform oneself about th | of the final exam ar essays, objective t ne course. All notice | nd is obliged to provide the second structure of the s | take the oral , discussion, ance or even | exam only. The final roleplay, presentation atual postponement of | tudent successfully passes both ex exam consists of a written and a a creation, etc. The obligation of a teaching will be published on the well as the teaching materials and t | n oral part. Ways to check each student is to regularly web site of the Polytechnic |
|---|--|--|--|--|---|---|---|
| | Attendance 0, | 5 | Written exa | m | 1 (without colloquia |) Project | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | | Practical work | |
| for each activity so that the total number of ECTS points | Essay | | Report | | | Continuous examination | |
| corresponds to the credit score of the course) | Colloguium | (without written am) | Seminar paj | per | | Other | |
| | Class activity 0, | 5 | Oral exam | | 1 | Other | |
| 3.3. Student workload | U | ll bases for 1 ECTS sses and exercises 4 loquia or exams thr | 15 hours | | | S: | |
| 4. GRADING SYSTEM | | | | | | | |
| 4.1. Grading seminar papers | - | | | | | | |
| | Unsatisfa | actory | | Satisfact | ory | Above aver | 0 |
| 4.2. Grading colloquia/ written and oral exam | Responds by memory understanding. Does basic terms and co know how to apply contents of the course | not know or apply ncepts. Does not y or explain the | difficulty impa | arts new kno explains the | ncepts and without wledge, understands terms and concepts | Knowledge is at the level of evaluation. Observes the pri thoroughly explains the conte logically connects and explains supported with examples. Finds originally given. Notes correlation | nciples, accurately and nt of the material, and the terms and concepts s solutions that were not |
| 4.3. Final grade according to | Active course | 70-75% of | | 76-869 | 6 of attendance | 87-100% of attendance | Maksimum bodova |
| evaluation elements | attendance | 3 ро | ints | | 7 points | 20 points | 20 bodova |



| | Seminar paper | | | | | |
|---|-------------------|---|------------------|-----------|-----------|--|
| | | 2 | 3 | 4 | 5 | |
| | Colloquia/Written | 50-64,9% | 65-79,9% | 80-89,9% | 90-100% | |
| | exam | 25 points | 30 points | 35 points | 40 bodova | |
| | Oral aram | 2 | 3 | 4 | 5 | |
| | Oral exam | 25 points | 30 points | 35 points | 40 bodova | |
| | _ | quired knowledge, skills and (teaching + final exam) | Numerical grade | ECT | ΓS grade | |
| | | 90-100% | 5 (excellent) | | А | |
| 4.3. Final grade according to absolute division | | 80-89,9% | 4 (very good) | | В | |
| | | 65 – 79,9% | 3 (good) | | С | |
| | | 60-64,9% | 2 (satisfactory) | | D | |
| | | 50 - 59,9% | 2 (satisfactory) | | Е | |

5. ADDITIONAL COURSE INFORMATION

| 5.1. Compulsory literature | Title | Number of copies in the library | Availability via other media |
|---|--|------------------------------------|---------------------------------|
| (available in the library and via other media) | Katja Bošković Gazdović: "English textbook of Transport I", Faculty for transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters) | 10 | Х |
| 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 Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail). |



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

| 1.1. Course title | TRAFFIC CORRIDORS AND MERCHANDISE | 1.8. Course code in ISVU | |
|---|--|---|---|
| | FLOWS | | 140771 |
| 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 | | 1.11. Level of e- learning application (1 st , 2 nd , 3 rd level), | 1 st , course materials are on-line, |
| (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | percentage of on line course performance (max. 20%) | 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 | X yes □ no |
| 1.7. Credit score (ECTS) | 4 | 1.14. Percentage estimate of course changes and/or | Less than 20% X |
| | + | supplements | More than 20 % \Box |
| 2. COURSE DESCRIPTION | | | |
| 2.1. Course objectives | | dge and case studies: become familiar with the creation and de e World and Croatia, distinguish the main transport corridors | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification lev | vel 4.2 according to the CROQF. | |
| 2.3. Learning outcomes on the study programme level | in Croatian and English. | y and organization of road traffic in written and oral communi | cation with the professional public |
| | LO2: To organize and implement team work, and critically | judge the opinions and attitudes of team members. | |
| | LO3: To individually and responsibly search, interpret and | integrate the relevant literature needed to make decisions. | |
| | LO6: To analyze and present relevant facts from the field of | | |
| | LO10: To compare and choose technical and technological | solutions in traffic and/or goods flows. | |
| | Do 10. To compare and encose technical and technological | | |



| | Learr | ing outcomes by Bloom: (maximum 2 v | verbs for LO) | | | Level of LO: | |
|----------------------------------|-------|--|-----------------|--|---|---|------------|
| 2.4. Expected learning | | | | | | 1- memory, | |
| outcomes on the course level (4- | | | | | | 2- understanding, | |
| 10 learning outcomes) | | | | | | 3- application, | |
| _ | | | | | | 4- analysis, | |
| | | | | | | 5- evaluation, | |
| | | | | | | 6- synthesis. | |
| | 1, | Present and comment on the historical | l development | t of the traffic branches. | | 6, 3 | |
| | 2. | List and explain the main factors for t | he creation an | d development of commodity flows. | | 1, 2 | |
| | 3. | Analyze and evaluate world trade in g | goods. | | | 4, 5 | |
| | 4. | Present and comment on the traffic co | nnection of th | e Republic of Croatia. | | 6, 4 | |
| | 5. | List and compare major transport corr | idors in Europ | pe and the Republic of Croatia. | | 1, 2 | |
| | 6. | Comment on the objective and strateg transport. | y of the Marc | o Polo Program and the current White Paper E | U about | 4 | |
| | 7. | - | ntific and prof | essional literature in native and English languation | ages. | 3 | |
| | 8. | Present the acquired knowledge, ideas | s, problems, a | nd solutions independently and in a team. | | 6 | |
| 2.5. Course content according to | Const | ructive allignement | | | | | |
| detailed curriculum schedule | | | | | | | |
| | No | Thematic unit | LO of the | Content/teaching methods | Eval | uation | Time |
| | | | course | | | | needed |
| | 1. | Introductory presentation (introducing | | Listening to the lecture. In the course of | | | |
| | | students to the course content and | | seminars, they are introduced to the course | | | |
| | | | | seminars, mey are multituded to me course | | | |
| | | obligations) | - | content and documents on the e-learning | | - | 2 h |
| | | obligations) | - | | | - | 2 h |
| | | obligations) | - | content and documents on the e-learning | | - | 2 h |
| | 2. | obligations) Geo-traffic factors of formation and | - | content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature. | At the colloquiun | - n or the written and | 2 h |
| | 2. | | - | content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature. At the seminar class, they individually | - | n or the written and nts know how to | 2 h |
| | 2. | Geo-traffic factors of formation and | - 278 | content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by | oral exam stude define, numerate | nts know how to and distinguish the | |
| | 2. | Geo-traffic factors of formation and location of commodity flows (General | - 2, 7, 8 | content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of | oral exam stude define, numerate | nts know how to | 2 h 6 h |
| | 2. | Geo-traffic factors of formation and location of commodity flows (General geo-traffic factors, natural | - 2, 7, 8 | content and documents on the e-learning page of the course by working independently on a computer. They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by | oral exam stude define, numerate main factors for | nts know how to and distinguish the | |



| | | | knowledge and presents their own ideas, | economic factors). Identify | |
|----|-------------------------------------|------------|---|---------------------------------------|------|
| | | | and ways to solve problems. | abbreviations of economic groups of | |
| | | | and ways to solve problems. | the world. Seminar paper created | |
| | | | | and presented (by computer | |
| | | | | 1 1 | |
| | | | | programs). | |
| 3. | 1 1 | | They listen to a lecture and read literature. | At the colloquium or written and | |
| | (development of road, rail, and | | At the seminar class, they individually | oral exam students know to present | |
| | pipeline transport) | | explore the content of this topic area by | and comment on the historical | |
| | | | searching the database, and on the basis of | development of transport on land. | |
| | | 1, 3, 7, 8 | it and reading the literature, create a | Analyze and evaluate the | 6 h |
| | | | seminar paper that presents the acquired | merchandise trade in land traffic, in | |
| | | | knowledge and presents their own ideas, | the world. Seminar paper created | |
| | | | and ways to solve problems. | and presented (by computer | |
| | | | | programs). | |
| 4. | The development of transport on the | | They listen to a lecture and read literature. | At the colloquium or the written and | |
| | water (history, World and European | | At the seminar class, they individually | oral exam students know how to | |
| | ports, shipping routes, ships for | | explore the content of this topic area by | present and comment on the | |
| | freight) | | searching the database, and on the basis of | historical development of water | |
| | | | it and reading the literature, create a | traffic, the development of seaports. | |
| | | 1, 3, 7, 8 | seminar paper that presents the acquired | Analyze and evaluate the | 6 h |
| | | | knowledge and presents their own ideas, | merchandise of trade in the world's | |
| | | | and ways to solve problems. | water transport. Categorize seaports, | |
| | | | | regions, and routes. Seminar paper | |
| | | | | created and presented (by computer | |
| | | | | programs). | |
| 5. | The development of transport on the | | They use multimedia and network. They | At the colloquium or written and | |
| | water (video films) | | listen to a lecture and read literature. At the | oral exam students know present | |
| | ~~~~ | | seminar class, they individually explore the | seaports in the world. Identify and | |
| | | 1, 3, 7, 8 | content of this topic area by searching the | distinguish terminals at the seaport. | 6 h |
| | | -, 5, 7, 0 | database, and on the basis of it and reading | Analyze and evaluate the cargo | 0.11 |
| | | | the literature, create a seminar paper that | traffic of the seaport. Categorize | |
| | | | presents the acquired knowledge and | seaports, ships, regions, and routes. | |
| | | | presents the acquired knowledge and | seaports, sinps, regions, and routes. | |



| 1 | | | | | | |
|---|----|---|------------|---|---------------------------------------|-----|
| | | | | presents their own ideas, and ways to solve | Seminar paper created and presented | |
| | | | | problems. | (by computer programs). | |
| | 6. | The development of traffic in the air | | They listen to a lecture and read literature. | At the colloquium or written and | |
| | | (types of aircraft, aircraft | | At the seminar class, they individually | oral exam students know to present | |
| | | manufacturers, airlines, airports and | | explore the content of this topic area by | and comment on the historical | |
| | | routes) | | searching the database, and on the basis of | development of traffic in the air. | |
| | | | 1, 3, 7, 8 | it and reading the literature, create a | Analyze and evaluate the | 6 h |
| | | | | seminar paper that presents the acquired | merchandise in air traffic in the | |
| | | | | knowledge and presents their own ideas, | world. Categorize airports and | |
| | | | | and ways to solve problems. | airlines. Seminar paper created and | |
| | | | | | presented (by computer programs). | |
| | 7. | The development of traffic in the air | | They use multimedia and network. They | At the colloquium or written and | 6 h |
| | | (video film) | | listen to a lecture and read literature. At the | oral exam students know the present | |
| | | | | seminar class, they individually explore the | airport in the world. Identify and | |
| | | | | content of this topic area by searching the | distinguish the types and capacity of | |
| | | | 1, 3, 7, 8 | database, and on the basis of it and reading | aircraft for passenger and cargo | |
| | | | | the literature, create a seminar paper that | transportation. Analyze and evaluate | |
| | | | | presents the acquired knowledge and | continental air routes. Seminar paper | |
| | | | | presents their own ideas, and ways to solve | created and presented (by computer | |
| | | | | problems. | programs). | |
| | 8. | Transport corridors in Europe (Trans- | | They listen to a lecture and read literature. | At the colloquium or written and | 6 h |
| | | European transport network, transport | | At the seminar class, they individually | oral exam students know state and | |
| | | corridors in Western and Northern | | explore the content of this topic area by | compare the main transport | |
| | | Europe, Pan-European transport | | searching the database, and on the basis of | corridors in all parts of Europe and | |
| | | corridors, pipeline corridors, inland | 5, 7, 8 | it and reading the literature, create a | all branches of transport. Define the | |
| | | waterways) | 5, 7, 8 | seminar paper that presents the acquired | term of traffic corridor. List the | |
| | | | | knowledge and presents their own ideas, | countries through which each | |
| | | | | and ways to solve problems. | transport corridor passes. Seminar | |
| | | | | | paper created and presented (by | |
| | | | | | computer programs). | |
| | 9. | Transport corridors in the Republic of | | They listen to a lecture and read literature. | At the colloquium or the written and | 6 h |
| | | Croatia (Geographical location, traffic | 4, 5, 7, 8 | At the seminar class, they individually | oral exam, students can identify and | |
| | | | | explore the content of this topic area by | compare major traffic corridors in | |
| | | | | | | |



| 1 | | | | | | |
|---|-----|--|------------|---|--|-----|
| | | directions, traffic corridors in the road, | | searching the database, and on the basis of | Europe and the Republic of Croatia. | |
| | | rail, air, water, and pipeline transport) | | it and reading the literature, create a | Present, critically evaluate the traffic | |
| | | | | seminar paper that presents the acquired | connection of the Republic of | |
| | | | | knowledge and presents their own ideas, | Croatia in the road, rail, air, pipeline | |
| | | | | and ways to solve problems. | and inland waterway transport. | |
| | | | | | Seminar paper created and presented | |
| | | | | | (by computer programs). | |
| | 10. | Merchandise and traffic flows in the | | They listen to a lecture and read literature. | At the colloquium or the written and | 6 h |
| | | modern world (Concept and | | At the seminar class, they individually | oral exam, students know how to | |
| | | characteristics of traffic flow, | | explore the content of this topic area by | define the concept of goods traffic. | |
| | | commodity flows of food, raw | | searching the database, and on the basis of | Categorize, analyze and evaluate the | |
| | | materials, and industrial products) | 3, 7, 8 | it and reading the literature, create a | world trade of food, raw materials, | |
| | | | 5, 7, 0 | seminar paper that presents the acquired | and industrial products. List the | |
| | | | | knowledge and presents their own ideas, | countries with the largest importers | |
| | | | | and ways to solve problems. | and exporters of all types of goods. | |
| | | | | | Seminar paper created and presented | |
| | | | | | (by computer programs). | |
| | 11. | Merchandise and traffic flows of the | | They listen to a lecture and read literature. | At the colloquium or the written and | 6 h |
| | | Republic of Croatia (import and | | At the seminar class, they individually | oral exam students know how to | |
| | | export of products, merchandise and | | explore the content of this topic area by | analyze and evaluate the trade of | |
| | | traffic flows of the Republic of Croatia | | searching the database, and on the basis of | products in the Republic of Croatia. | |
| | | in land, water, and air) | | it and reading the literature, create a | List the products that the Republic of | |
| | | | 3, 4, 7, 8 | seminar paper that presents the acquired | Croatia imports/exports the most. | |
| | | | 3, 4, 7, 8 | knowledge and presents their own ideas, | Present, critically evaluate and | |
| | | | | and ways to solve problems. | comment on the traffic connection | |
| | | | | | of the Republic of Croatia in all | |
| | | | | | branches of traffic. Seminar paper | |
| | | | | | created and presented (by computer | |
| | | | | | programs). | |
| | 12. | Marco Polo Program (program | | They use multimedia and network. They | At the colloquium or the written and | 4 h |
| | | objective, program activities, program | 6, 7, 8 | listen to a lecture and read literature. At the | oral exam, students can define the | |
| | | projects) | 0, 7, 0 | seminar class, they individually explore the | goal and strategy of the Marco Polo | |
| | | | | content of this topic area by searching the | program. Distinguish activities | |
| | | | | | | |



| 1 | | | | | | |
|--------------------------|--------|--|-------------|---|--|------------|
| | | | | database, and on the basis of it and reading | Marco Polo. Critically evaluate the | |
| | | | | the literature, create a seminar paper that | professional video films | |
| | | | | presents the acquired knowledge and | program.Seminar paper created and | |
| | | | | presents their own ideas, and ways to solve | presented (by computer programs). | |
| | | | | problems. | | |
| | 13. | European Union White Paper on | | They listen to a lecture and read literature. | At the colloquium or written and | |
| | | Transport (White Paper titles, key | | At the seminar class, they individually | oral exam, students define objective | |
| | | content areas, preparing the European | | explore the content of this topic area by | and strategy of the current EU White | |
| | | transport area for the future, visions | | searching the database, and on the basis of | Paper on transport. Comment on EU | C 1 |
| | | for developing a competitive and | 6, 7, 8 | it and reading the literature, create a | professional projects in the field of | 6 h |
| | | sustainable transport system, strategy | | seminar paper that presents the acquired | transport. Seminar paper created and | |
| | | - what needs to be done) | | knowledge and presents their own ideas, | presented (by computer programs). | |
| | | | | and ways to solve problems. | | |
| | 14. | Study visit to the port of Rijeka | | | During the study visit, students will | |
| | | | | | be able to analyze and evaluate the | |
| | | | | | exchange of products through | |
| | | | | | seaports in the Republic of Croatia. | |
| | | | | | To present and comment on the | |
| | | | 3, 4, 5 | | traffic connection of the Republic of | 8 h |
| | | | | | Croatia in road and rail transport. | |
| | | | | | List and compare major transport | |
| | | | | | corridors in Europe and the Republic | |
| | | | | | of Croatia. | |
| | 15. | Final considerations/Repeating and | | They listen to a course lecture and prepare | | 40 h |
| | | preparing for the exam. | - | individuals for the exam. | - | |
| 3. EVALUATION OF STUE | DENT V | | | | | |
| 3.1. Student obligations | In acc | ordance with the Rulebook on Study and | the Ruleboo | k on Student Assessment and Evaluation: for | all full-time students attendance of at le | east 70%. |
| U U U | | | | %. All students must create, present and positiv | | |
| | | - | | re rated F (unsuccessful) and cannot earn ECTS | | |
| | | • | | nd must pass and pass the written exam (test). | | |
| | - | • | | the right to take the final exam. Students can take | | - |
| | | | | ring of students (active participation in classe | | - |
| | | en and oral part of the exam). | | | | |
| | | r | | | | |



| 3.2. Student work monitoring (enter the share of ECTS credits | Attending classes | 1 | Written exam | 1 (without colloqiums) | Project | |
|---|--|--|--|---|---|--|
| for each activity so that the total | Experimental work | | Research | _ | Practical work | |
| number of ECTS credits | Esaay | | Report | | Continuous check | |
| corresponds to the course credit value) | 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 | | uses is 1 ECTS credit for 30 semes the midterm/exam through self-s | | attendance (60 hours), | preparation of seminar | work and presentation |
| 4. GRADING SYSTEM | • | | | | | |
| 4.1. Evaluation of seminar paper | Elements of evaluation | Bad | Satisfy | ing | Above | average |
| | Organization Terminolog, writing style | The paper is not organized in a logical order and lacks structure. 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 | The paper is well stru distinction between the in body of the text and the c Words and expressions an terminology. The writing the sentence structure is ch appropriate and there a errors. | troduction, the main onclusion. The in line with official style is appropriate, lear, the vocabulary is | distinction between main body of the tex which are logically in Words and expressi official terminolog understanding of their style is excellent, the | ons are aligned with y and show an r meaning. The writing sentences are clear and ry is rich and there are |
| | Citing and referencing references | grammatical errors. 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 errors. The references are and show a satisfactory re | e relevant to the topic esearch attitude. | consistently listed. appropriate, their comprehensive and research approach. | rately, completely and The references are list is "rich" and shows a detailed |
| | | Bad | Satisfy | ing | Above | average |



| | | | | | - | |
|--|--|------------------------------------|---|-------------------|--|--|
| 4.2. Gradeing of the | It responds by memory, w | ithout a deeper understanding. It | It reproduces the basic con- | cepts and without | Knowledge is at the level of analysis, | |
| colloquium/written and oral | does not know or apply b | asic terms and concepts. It does | difficulty imparts new knowledge, understands | | synthesis, and evaluation. It observes the | |
| exam | not know how to apply or e | explain the contents of the course | the material, explains the te | - | legality, accuratel | y and thoroughly explains |
| | with examples. | | that it supports with example | es. | the content of th | e material, and logically |
| | | | | | | xplains the terms and |
| | | | | | - | supports with examples. |
| | | | | | | that were not originally |
| | | | | | given. It notes material. | correlations with related |
| 4.3. Forming the final grade according to the evaluation | Active attendance on class | 70-75% attendance | 76-86% attendance | 87-100% | attendance | Mental map created, Case studies resolved |
| elements | | 2 points | 4 points | 7 p | points | 3 points |
| | Seminar paper | 2 | 3 | 4 | | 5 |
| | | 5 points | 7 points | 8 p | points | 10 points |
| | Colloquiums/ Written part of exam | 2 | 3 | 4 | | 5 |
| | | 50 - 64,9% | 65 - 79,9% | 80 - 89,9% | | 90 - 100% |
| | | 25 points | 30 points | 35 points | | 40 points |
| | | 2 | 3 | 5 | | 5 |
| | Oral part of exam | 25 points | 30 points | 35 | points | 40 points |
| 4.4. Formation of the final grade based on the absolute | Percentage of acquired knowledge, skills and competencies (teaching + final exam) | | Numerical grade | | ECTS grade | |
| distribution | · · · | 0-100% | 5 (excellent | .) | A | |
| | 80 | - 89,9% | 4 (very good | 1) | В | |
| | 65 | - 79,9% | 3 (good) | | | С |
| | 60 | - 64,9% | 2 (sufficient) | | | D |
| | 50 | - 59,9% | 2 (sufficient) | | | Е |
| 5. ADDITIONAL INFORMATI | ION ABOUT COURSE | | | | I | |
| | | | | | | |



| 5.1. Compulsory literature | Title | Number of copies in the | Availability via |
|------------------------------------|--|---------------------------------|----------------------------|
| (available in the library and via | | library | other media |
| other media) | Sego Darijo: Traffic corridors and merchandise flows, Script for internal use, Polytechnic of Sibenik, | | e-learning system |
| | Sibenik 2016. | | |
| | Strategy for Transport Development of the Republic of Croatia for the Period 2014-2030. (selected | | Internet website |
| | chapters) | | |
| | World trade organization <u>http://www.wto.org/</u> (selected chapters) | - | Internet website |
| | Transport in EU http://ec.europa.eu/transport/index_en.htm(selected chapters) | - | Internet website |
| | Central Bureau of Statistics of the Republic of Croatia https://www.dzs.hr/ | | Internet website |
| 5.2. Additional literature (at the | Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of | - | e-learning system |
| moment of changes and/or | Sibenik for the mentioned course. | | |
| amended of study programme) | International trade statistics <u>https://www.trademap.org/Index.aspx</u> | | Internet website |
| | UN agency for food http://www.fao.org/home/en/ | | Internet website |
| 5.3. Quality assurance methods | The control of students' work quality and the acquisition of necessary knowledge and skills will be e | • | |
| that ensure the acquisition of | attendance and student activity during classes and provided information on students` progress throu | gh short colloquiums and hon | nework, information for |
| knowledge, skills and | further guidance to students will be provided in order to increase the efficiency of their work. Student | nts will be informed about the | ir rights and obligations |
| competences | as well as the methods of work and the required literature. Indicators of quality assurance system: | | of annual data from the |
| | Croatian employment service on the annual state of student employment, surveys from employers an | d Alumni association. | |
| 5.4. Informing about the course | It is the responsibility of each student to be regularly informed about the course, the coursework, and | classroom activities. All notic | es of classes or possible |
| and contacting the course | adjournment will be published in a timely manner on the e-learning site of the course and on the well | bsite of the Polytechnic. Stude | nts can contact teachers |
| lecturer | during the consultation period (at least one hour per week), while for short questions and explanation | s they can be contacted during | class. It is also possible |
| | to ask questions by e-mail (from the official e-mail address name@vus.hr), which will be answered as | soon as possible (no later than | five working days after |
| | receiving the e-mail). | | |



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

| 1. GENERAL INFORMATION | | | | | | | |
|--|---|---|---|--|--|--|--|
| 1.1. Course title | TRAFFIC LAW | 1.8. Course code in ISVU | 140781 | | | | |
| 1.2. Course lecturer | MSc. Krešimir Nimac, lecturer | 1.9. Course code in MOZVAG | | | | | |
| 1.3. Assistants and associates | - | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (30 + 0 + 15 + 0) | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1.11. Level of e- learning application (1 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 | 2 nd | 1.13. Modernization | X yes \Box no | | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | |

| 2 COURSE DESCRIPTION | | | | | | |
|---|---|--------------|--|--|--|--|
| 2.1. 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 spe law. In this way, students acquire basic knowledge about the system of traffic law and the relationship between specific modes of tra- 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 | | | | | |
| | LO1: Use and connect professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. | | | | | |
| 2.3. Learning outcomes on the | LO2: Organize and conduct teamwork, and critically judge the opinions and attitudes of team members. | | | | | |
| study programme level | LO3: Independently and responsibly search, interpret and integrate the relevant literature needed for decision making. | | | | | |
| | LO5: Apply basic legal and economic principles in the organization with socially responsible business in technical-technological entities. | | | | | |
| | LO6: Analyze and present relevant facts from the traffic area needed to draw conclusions. | | | | | |
| | Learning outcomes according to the Bloom's taxonomy: (up to two verbs per LO) | Level of LO: | | | | |



| 2.4. Expected learning outcomes | | 1- remembering 2- understanding 3- application 4- analysis 5- evaluation 6- synthesis |
|---------------------------------|---|--|
| on the course level (4-10 | 1. Define basic concepts and concepts of law, and connect them with different branches of traffic | 1, 3 |
| learning outcomes) | 2. Classify and analyze branches of transport, as well as administrative law and property legal regulation of all individual transport branches | 2,4 |
| | 3. Recommend measures to improve the road safety situation in the Republic of Croatia | 5 |
| | 4. Define trends in traffic law | 1 |
| | 5. Draw up a draft contract for the carriage of passengers, luggage or items in road transport | 6 |

| | Constr | ructive 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 |
| 2.5. Course content according to detailed curriculum schedule | | 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 the Republic of Croatia. Developed and presented practical work (independent use of computer programs). | 3 h |



| 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 companies, and draw conclusions about the application of legal | 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 (independent use of computer programs and sources of court and legal practice). | 3 h |



| 1 | | | | | | |
|-------|-----|--|---------|--|---|-----|
| | | | | regulations to a specific factual | | |
| | | | | situation. | | |
| | 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. | ROADTRANSPORTCONTRACTS - concept of transportcontract,essentialelements,conclusionofcontract,liability, | 2, 4, 5 | Students listen to lectures, browse databases and read literature. At the seminar classes, they group up a | At the midterm or oral exam, they know how to define the essential features of a contract on road transport in accordance | 4 h |



| | | transport of goods and transport of | | contract on the transport of | with the Civil Obligations Act of the | |
|---|-----|---|---------|--|--|------|
| | | passengers | | passengers and things. | Republic of Croatia. | |
| | | | | | Prepared and presented practical work | |
| | | | | | (independent use of computer programs and | |
| | | | | | sources of legal practice). | |
| - | 11. | ROAD SAFETY | 2, 3, 4 | | At the midterm or oral exam, they know | 3 h |
| | | | | Students listen to lectures and read | how to define basic institutes related to road | |
| | | | | literature. The seminar method uses | traffic safety in accordance with the Road | |
| | | | | the brainstorming method and the | Traffic Safety Act in the Republic of | |
| | | | | method of discussing legislation | Croatia. | |
| | | | | with special reference to young | Developed and presented practical work | |
| | | | | drivers. | (independent use of computer programs and | |
| | | | | | sources of legal practice) | |
| | 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 | 3 h |
| | | | | | emphasis on shipping contracts. Prepared | 5 11 |
| | | | | | and presented practical work (independent | |
| | | | | | use of computer programs and sources of | |
| - | | | | | legal practice). | |
| | 13. | POSTAL LAW - postal network, Postal Services Council, accession treaty, international postal traffic organizations | 2, 4 | | At the midterm or written / oral exam, they | |
| | | | | | can define the basic concepts related to | |
| | | | | Students listen to lectures and read | postal law, as well as the manner of | 3 h |
| | | | | literature. In seminar classes, they | administrative and property regulation of | |
| | | | | analyze examples from practice | postal traffic in the Republic of Croatia. | |
| | | | | individually or in a group. | Prepared and presented practical work | |
| | | | | | (independent use of computer programs and | |
| - | 14. | TELECOMMUNICATION LAW - | 2, 4 | | sources of legal practice). | |
| | | HAKOM, infrastructure, | | Studente listen te lastures hurren | At the colloquium or oral exam, they know how to define the basic concepts related to | 3 h |
| | | concessions, protection of service | | Students listen to lectures, browse databases and read literature. | telecommunications law, as well as the | |
| | | users' rights, market competition | | uatabases and read merature. | manner of administrative and property | |
| | | users rights, market competition | | | manner of administrative and property | |



| | | | | | | regulation of telecommunications traffic the Republic of Croatia. Prepared a presented practical work (independent of computer programs and sources of le practice). | and use | |
|--|---|---|---|--|--|--|--|--|
| | 15. CONCLUDING PREPARATION | , | - | Students liste literature. individually f | - | - · · | 40 h | |
| 3. EVALUATION OF STUDEN | NTS` WORK | | | | | | | |
| 3.1. Students` obligations | least 70%. Part-time stude who have achieved during from 0 - 24,9% from 25 - 49,9% extraordinary ex more than 50% Students can take the final | ents are required to att g the course: ECTS credits- are rate 6 - are assessed by 1 amination period; - students have the rig l exam in the course i and presentation of s | end classes at ed F (unsucces FX (insufficies ht to take the n two ways: a eminar work | least 50%. All ssful) and canno ent) and must p final exam. a) during the con and two midte | students must creat of obtain ECTS creat bass the written ex urse of teaching the rm exams); b) du | at and Evaluation: for all full-time students' at the, present and have a positively rated seminar p edits, and must re-enrol in the next academic ye xam (test). Written exam (test) can be held in rough continuous monitoring of students (active ring class (active participation in teaching, pr | aper. Students ar; a a regular or e participation | |
| | Attendance | 0,5 | Writte | n exam | | Project | | |
| 3.2 Monitoring student work (enter the share of ECTS credits | Experimental work | | Resear | rch | | Practical work | | |
| for each activity so that the total number of ECTS points | Esssay | | Repor | t | | Continuous examination | | |
| corresponds to the credit score | Colloquium (midterm) | 2 | Semin | ar paper | 0,5 | Other | | |
| of the course) | Class activity | | Oral e | xam | 2 (without colloquia/mid | lterm) Other | | |
| | Student workload on all b | bases for 1 ECTS cred | it is 30 hours | in a semester a | 1 | | | |
| 3.3. Student workload | Obligation | | | | Hours (estimate | ed) | | |
| | 1. Attendance | ar paper and presentat | ion | | 35 15 | | | |
| | 2. Writing semina | u paper and presentat | 1011 | | 15 | | | |



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

40

4 GRADUATE SYSTEM

| 4. GRADUATE SYSTEM | | | | | | | | | |
|---|--|---|--|---|----------------------------|--|--|---|--|
| | The evaluation element | Unsatisfact | tory | Satisfa | actory | | | Above average | |
| 4.1. Grading seminar papers | 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. | | uction, | distinction main body | is well structured with a between the introduction of the text and the conclu logically interconnected. | n, the |
| | 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. | | g style eture is ate and | official t understand writing styl clear and c and there a | d expressions are aligned terminology and show ding of their meaning. de is excellent, the sentence concise, the vocabulary is are no grammatical errors. | an The es are s rich |
| | Citing and references | The sources are not line references do not fit the a cursory approach to topic. | e topic and show and with errors. The references | | es are | and consist appropriate | tees are accurately, completently listed. The reference e, their list is "rich" nsive and show a det pproach. | es are and | |
| | Unsatis | sfactory | | Satisfactory | | | Α | bove average | |
| 4.2. Grading colloquia/ written and oral exam | understanding, does not terms and concepts, doe | emory, without a deeper ot know or apply basic s not know how to apply ts of the course with | without difficution difficutio | luces the basic co alty imparts new material, explains the ting them with exam | knowledge, he terms and | and eva law, a content and ex them v not orig | aluation. Stu accurately a t of the ma plains the t with examp | the level of analysis, synt udent observes the principl and thoroughly explains aterial, and logically con- terms and concepts suppo bles. Finds solutions that en and notices correlations | les of the nects orting were |
| 4.3. Final grade according to | A ative attendance | 70-75% attendance | 76-8 | 6% attendance | 87-100 | % attend | lance | Solved case studies | 3 |
| absolute division | Active attendance | 2 points | | 4 points | 7 | points | | 3 points | |



| | Sami'n an nanan | 2 | 3 | 4 | | 5 | |
|--|--|--|---------------------|-----------|--|------------------------------|--|
| | Seminar paper | 5 points | 7 points | 8 points | 8 points | | |
| | | 2 | 3 | 4 | | 5 | |
| | - | 50-64,9% | 65-79,9% | 80-89,9% | | 90-100% | |
| | competences (1 90 80 65 60 60 50 FORMATION | 25 points | 30 points | 35 points | | 40 points | |
| | | 2 | 3 | 5 | | 5 | |
| | Oral exam | 25 points | 30 points | 35 points | | 40 points | |
| | | red knowledge, skills and eaching + final exam) Numerical grade | | ECTS | ECTS grade | | |
| Final grade according to solute division | 90 | 0 - 100% | 5 (excellent) | A | А | | |
| • | 80 | - 89,9% | 4 (very good) | E | S grade A B C D E f copies in ibrary | | |
| | 65 | - 79,9% | 3 (good) | (| C D | | |
| | 60 | -64,9% | 2 (satisfactory) | Ľ | | | |
| | 50 | - 59,9% | 2 (satisfactory) | Е | | | |
| . ADDITIONAL COURSE INI | FORMATION | | | | | | |
| .1. Compulsory literature | | Title | | | | Availability via other media | |
| vailable in the library and via | Slobodan Kaštela, Ladis | av Horvat: Traffic law, School | book, Zagreb, 2008. | 5 | % 90 its 40 its 40 ECTS grade 40 A 6 C 0 D 6 E 6 Number of copies in the library 6 | | |
| other media) | Dragan Bolanča: Traffic law (book in electronic form), Polytechnic of Šibenik, 2016. | | | | | | |

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 lectures5.3. Quality assurance methods
that ensure the acquisition of
knowledge, skills and
competencesThe control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of
attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for
further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations
as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the
Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.



| | It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or |
|---------------------------|---|
| 5.4 Informing about the | possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact |
| course and contacting the | 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 |
| teacher | possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working |
| | days after receiving the e-mail). |



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

| 1. GENERAL INFORMATION | | | |
|--|--|---|---|
| 1.1. Course title | TRANSSHIPMENT RESOURCES | 1.8. Course code at ISVU | 214571 |
| 1.2. Course lecturer | Ana-Mari Poljičak, grad. eng. traff., 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) | (45 + 15 + 15 + 0) |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no |
| 1.7. Credit point (ECTS) | 6 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ |

| 2. COURSE DESCRIPTION | |
|---|--|
| 2.1. Course objectives | The goal is to provide students with theoretical knowledge: Distinguish between types of transshipment resources; Understand the principle of continuous operation of transhipment machinery and set an example for application in business practice; Calculate the efficiency of uninterrupted handling equipment; Learn how to choose uninterrupted handling equipment based on the type of goods. Describe and distinguish between basic features and performance of transshipment mechanization with periodically action; Understand the application and purpose of transshipment mechanization with periodically action; Apply the learned content of this course in business practice. |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the HKO. |
| 2.3. Learning outcomes on the study programme level | LO1: To apply and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English. LO2: To organize and conduct teamwork, and critically evaluate the opinions and attitudes of team members. |



| | LO3: To independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions. | | | | | | | | |
|---|--|---|--|--|--|--|--|--|--|
| | LO4: To apply knowledge from the field of natural and technical sciences to problems in the field of road transport. | | | | | | | | |
| | LO6: To analyze and interpret relevant road transport facts needed to reach conclusions. | | | | | | | | |
| | LO10: To ompare and select technical and technological solutions for traffic and / or goods flows. | | | | | | | | |
| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | | |
| | Learning outcomes according to Bloom's taxonomy: | Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis | | | | | | | |
| 2.4. Expected learning outcomes on the course level | 1. state the division of goods according to the technical suitability for transport and transhipment and list the physical and technical characteristics of the goods, | 1 | | | | | | | |
| | 2. to sketch and comment on continuous operation transhipments, | 3,4 | | | | | | | |
| | 3. calculate the productivity of individual continuous-action transhipment means, | 4 | | | | | | | |
| | 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, 3 | | | | | | | |
| | 6. distinguish and propose types of cranes with regard to the scope, | 2,6 | | | | | | | |
| | 7. calculate the productivity of transshipment mechanization with periodically action, | 3 | | | | | | | |
| | 8. define and calculate the number of pallets and containers required. | 1, 3 | | | | | | | |

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



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



| 1 | | | | | | |
|---|----|---|---------|---|---|-----|
| | | | | calculate the productivity of the conveyor by analytical methods. | calculate the required belt width for a belt conveyor. They know how to calculate the | |
| | | | | | productivity of belt conveyors. | |
| 4 | 4. | Screw conveyors. Scope, shapes and calculation of a screw conveyor. | 2, 3, 4 | They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes , they calculate the productivity of the conveyor by analytical methods. | At the colloquium or written and oral exam, they can explain the role of screw conveyors and state its advantages and disadvantages. Give an example of application. They can enumerate and sketch the shapes of the conveyor auger and indicate the type of material they are used for. Sketch and explain the working principle of a screw conveyor for piece goods. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the productivity of belt conveyors. | 8 h |
| 5 | 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 seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes , they calculate the productivity of the conveyor by analytical methods. | At the colloquium or written and oral exam, they know how to define elevators and list and explain the types of elevators. Sketch and explain the principle of operation of the elevator. List the types of buckets and the elements for the transfer of piece goods. At the colloquium or written and oral exam, they can state the types of pneumatic conveyors, sketch and explain their working principle. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the productivity of screw conveyors. | 8 h |
| 6 | 5. | Sectionalconveyors.Features and calculation ofsectionalconveyors.Vibrating conveyors.Scope,forms and calculation. | 2, 3, 4 | They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a | At the colloquium or written and oral exam, they can state the characteristics of sectional conveyors and sketch and explain their working principle. | 8 h |



| | | | 1 2 2 4 | seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes , they calculate the productivity of the conveyor by analytical methods. | At the colloquium or written and oral exam, they can state the characteristics of vibrating conveyors, explain their working principle and sketch them. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the productivity of elevators. | 8 h |
|---|----|--|------------|---|---|------|
| | 7. | Gravity conveyors. Scope, shapes and calculation of gravity conveyors. Conveyors scrapers. Scope, forms and calculation of scraper conveyors. | 1, 2, 3, 4 | They listen to lectures and read literature. In seminar classes, they individually research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. In the exercises classes , they calculate the productivity of the conveyor by analytical methods. | At the colloquium or written and oral exam, they know how to define gravity conveyors, explain the principle of work and state their advantages and disadvantages. Explain the principle of operation of a flat gravity slide and sketch it. Explain the principle of operation of a spiral gravity slide, list the designs and sketch them. List the types of gravity rollers and explain their working principle. Give an example of application. They can explain the principle of operation and sketch the scraper conveyor. Give an example of application. Explain what redlers are. Prepared and presented seminar paper (independent use of computer programs). They know how to calculate the productivity of pneumatic conveyors. | 8 h |
| ٤ | 8. | Repetitionandpreparationforthecolloquium.Colloquium I. | 1, 2, 3, 4 | They listen to lectures and read literature and individually prepare for the colloquium. | - | 25 h |
| | 9. | Crane operating class. Crane elements. | 5, 6, 7 | They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read the literature and prepare a seminar paper which presents the acquired knowledge. The brainstorming method and the | At the colloquium or written and oral exam, they can state and explain the classes of the crane and calculate the theoretical and operational productivity. List, distinguish and sketch crane elements and identify the crane | 8 h |



| | | | discussion method are applied in the | class. Prepared and presented seminar paper | |
|-----|------------------------|-----|---|---|------|
| | | | seminar classes. In the exercises classes, | (independent use of computer programs). | |
| | | | they get acquainted with the calculation of | | |
| | | | the productivity of transhipment machinery | | |
| | | | with occasional operation and calculate the | | |
| | | | productivity with an analytical method. | | |
| | | 5,7 | | At the colloquium or written and oral exam, | 8 h |
| | | | | they know how to list and describe the types | |
| | | | They listen to lectures and read literature. In | of ropes and choose the necessary rope. List | |
| | | | the seminar classes, they individually | and explain ways of fixing steel ropes. List, | |
| | | | research databases and, based on that, read | describe and sketch the types of hooks, | |
| | | | the literature and prepare a seminar paper | perform the calculation of the dangerous | |
| 10. | Ropes and steel ropes. | | which presents the acquired knowledge. | cross section of the hook. List, explain, sketch | |
| 10. | Hooks.Chain. Grippers. | | The brainstorming method and the | the types of chains and give an example from | |
| | | | discussion method are applied in the | practice. They can list, describe and sketch | |
| | | | seminar classes. In the exercises classes, | the types of catchers and give an example | |
| | | | they determine the classes of cranes by the | from practice. Calculate the parameters for | |
| | | | analytical method. | classifying cranes into classes and, based on | |
| | | | | the parameters, classify the cranes into a | |
| | | | | specific class. | |
| | | 5,7 | They listen to lectures and read literature. In | At the colloquium or written and oral exam, | 10 h |
| | | | the seminar classes, they individually | they can explain the task of the pulley, list the | |
| | | | research databases and, based on that, read | types of pulley, sketch the performance of the | |
| | | | the literature and prepare a seminar paper | pulley in practice. They know how to explain | |
| | | | which presents the acquired knowledge. | the task of brakes, list the types and give an | |
| 11 | Dullana Drahas | | The brainstorming method and the | example from practice. Sketch and explain | |
| 11. | Pulleys. Brakes. | | discussion method are applied in the | the brakes with two and one pedal. They can | |
| | | | seminar classes. In the exercises classes, | sketch and explain conical, belt and lamellar | |
| | | | they solve numerical problems for | brakes. Calculate the parameters for | |
| | | | manipulative vehicles using the analytical | classifying cranes into classes and, based on | |
| | | | method In the exercises classes, they solve | the parameters, classify the cranes into a | |
| | | | numerical problems with the analytical | specific class. | |
| | | | | | |



| 1 | | | | | | |
|---|-----|---|------------|--|--|------|
| | | | | method, which determine the parameters | | |
| | | | | for classifying cranes into classes. | | |
| | 12. | Division of the crane. Design of small cranes. | 5, 6, 7, 8 | They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read the literature and prepare a seminar paper which presents the acquired knowledge. The brainstorming method and the discussion method are applied in the seminar classes. In the exercises classes, they solve numerical problems for a hydraulic crane using the analytical method. | At the colloquium or written and oral exam, they can list small and large cranes. Sketch and explain small cranes and give an example from practice. Calculate the required pressure in the hydraulic jack cylinder, the required force at the end of the drive lever and the piston diameter. | 10 h |
| | 13. | Large cranes. | 5, 6, 7, 8 | They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read the literature and prepare a seminar paper which presents the acquired knowledge. The brainstorming method and the discussion method are applied in the seminar classes. In the exercises classes, they solve numerical problems with the use of containers using the analytical method. | At the colloquium or written and oral exam they know how to group large cranes. Sketch and explain large cranes. Explain the difference between boundaries and cranes. Give an example from practice. Calculate the required number of containers. | 12 h |
| | 14. | Universal manipulative vehicles. Forklifts, loaders and small towing vehicles. Pallets and containers. | 8 | They listen to lectures and read literature. In the seminar classes, they individually research databases and, based on that, read the literature and prepare a seminar paper which presents the acquired knowledge. The brainstorming method and the discussion method are applied in the seminar classes. | At the colloquium or written and oral exam, they know how to list and define universal manipulative vehicles. State the division of the forklift and give an example from practice. Explain loaders, list and describe small towing vehicles and give an example from practice. At the colloquium or written and oral exam, they know how to define and list the types of pallets and containers and | 8 h |



| | | | r | | classes, they solve s with the use of analytical method. | give an example from practic control number of the contain | | |
|---|---|--|---|--|--|---|--|-----------------------------------|
| | forthe15.Colloquiumconsideration | colloquium. II. Concluding | 1 | • | lecture and read the dually prepare for the | - | | 40 h |
| 3. EVALUATION OF STUDEN | T WORK | | | | | | | |
| 3.1. Students` obligations | Part-time students a Students who have • From 0 - • From 25 extraordin • More tha Students can pass the preparation and pro- | are required to attend a c achieved during the cou 24.9% of ECTS credits -49.9% - are assessed by ary exam period; n 50% - students have the final exam in the cou | class of at lears - they are not y FX (insuf the right to not rse in two no aper and two | least 50%. All studen rated F (unsuccessful fficient) and must pa take the final exam. ways: a) during class wo colloquia); b) du | ts must create, present a l) and cannot earn ECT ss and pass the written ses through continuous r | ion: for all full-time students nd positively colloquy semina S credits and must re-enroll in exam (test). Written exam (test nonitoring of students (active cicipation in classes and prepa | ar paper. the next academic st) can be held in r participation in cla | e year; egular or asses and |
| | Attendance | | Writt | ten exam | 4 (without colloquia) | Project | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Resea | arch | | Practical work | | |
| for each activity so that the total number of ECTS points | Essay | | Repo | ort | | Continuous examination | | |
| corresponds to the credit score of the course) | Colloquium | 4 (without written exam) | Semi | nar paper | 0,5 | Other | | |
| | Class activity | 0,5 | Oral | exam | 1(without colloquia) | Other | | |
| | | n all bases is 1 ECTS cr | redit 30 sen | mester hours and is e | 1 | | | |
| 3.3. Student workload | Obligatio | | | | Hours (estimated) | | | |
| | 1. Class att | endance | | | 75 | | | |



| | - | seminar paper and present oquia or exams through inc | | 10 95 | | | | |
|--|---|---|---|---|------------------|--|--|--|
| 4. GRADING SYSTEM | | <u> </u> | | | | | | |
| | Element of evaluation | Bad | | ; | Satisfying | | Above average | |
| | Organization | The paper is not organi order and lacks structur | • | The paper is well structured with a distinction between the introduct the main body of the text and conclusion. | | action, distinuted distinuted distribution d | paper is well structured with a clear nction between the introduction, the body of the text and the conclusion, ch are logically interconnected. | |
| 4.1. Grading of seminar work | Terminology, writing style | Words and expressions low in line with official terminology. The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors. | | Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors. | | e with g style ture is tte and are offic | ds and expressions are aligned with ital terminology and show an erstanding of their meaning. The ing style is excellent, the sentences clear and concise, the vocabulary is and there are no grammatical errors. | |
| | Citing and referencing references | The sources are not listed at all references do not fit the topic and a cursory approach to explorin topic. | | and with errors. The references an | | and are a are a com a com | sources are accurately, completely consistently listed. The references appropriate, their list is "rich" and prehensive and shows a detailed arch approach. | |
| | F | Bad | | Satisfying | | | Above average | |
| 4.2. Grading of the colloguium / written and oral exam | It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples. | | It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples. | | dge, understands | and evalua accurately at the material, the terms a 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 | | 0-75% of the presence | 76-86% of t | - | 87-100% of th | - | Case studies resolved | |
| according to the evaluation | attendance | 2 points | 4 po | | 7 poir | nts | 10 points | |
| elements | Seminar paper | 2 | 3 | | 4 | | 5 | |



| | | 5 points | 7 points | 8 poin | ts | 10 points | |
|---|--|---|----------------------------------|------------------|---------------------|------------------------|--|
| | Examination / | 2 | 3 | 4 | | 5 | |
| | Written | 50-64,9% | 65-79,9% | 80-89,9 | 9% | 90-100% | |
| | examination | 25 points | 30 points | 35 poir | nts | 40 points | |
| | Oral part of the | 2 | 3 | 4 | | 5 | |
| | exam | 25 points | 30 points | 35 poir | nts | 40 points | |
| | Ũ | of acquired knowledge, skills and | Number rating | | ECTS grade | ; | |
| 4.4. Formation of final grade | compe | tences (teaching + final exam) | | • | | | |
| | | 90 - 100% | | A | | | |
| based on absolute distribution | | <u>80 - 89,9%</u> <u>65 - 79,9%</u> | 4 (very good) | | B | | |
| | | , | 3 (good) | | С | | |
| | | $\frac{60-64,9\%}{50-59,9\%}$ | 2 (sufficient) 2 (sufficient) | | D E | | |
| | | Title | | | Number of copies in | Availability via other | |
| | | Title | the library | media | | | |
| | | ors, Faculty of transport and traffic | 0 | | | | |
| 5.1. Required literature (available in the library and | - | sions and elevators, Faculty of Me 04. (selected chapters) | 0 | Available online | | | |
| through other media) | Bognolo, D., Kršu Rijeka 2017. (sele | lja, M.: Transhipment means - Co cted chapters) | 3 | | | | |
| | | mples of solved tasks in the subject iversity of Zagreb, Zagreb 1994 (se | 0 | | | | |
| 5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program) | Serdar J.: Transmissions and elevators, Lexicographic Institute "M. Krleža", Zagreb, 1995. | | | | 5 | | |



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



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

| 1. GENERAL INFORMATI | ON | | | | | | |
|---|--|--|---------------------------------------|--|--|--|--|
| 1.1. Course title lecturer | THEORY OF VEHICLE MOVEMENT | 1.8. Course code in ISVU | 142538 | | | | |
| 1.2. Course title lecturer | Luka Olivari, mag. eng. mech., lecturer | | | | | | |
| 1.3. Assistants and/or associates | phD. Ernest Bazijanac, regular collegue professor | (30 + 15 + 0 + 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1st, course materials are on-line, 0% | | | | | |
| 1.5. Course status (obligatory, optional) | Obligatory | 4 | | | | | |
| 1.6. Year of study | 2 nd 1.13. Modernization | | X yes □ no | | | | |
| 1.7. Credit score (ECTS) | 4 | Less than 20%XMore than 20 %□ | | | | | |
| 2. COURSE DESCRIPTION | I | | | | | | |
| 2.1. Course objectives | The aim of the course is to provide students with theoret the problem of road vehicle exploitation. | ical knowledge and practical examples to acquire the knowledge | edge necessary to successfully solve | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification | level 4.2 according to the CROQF | | | | | |
| | LO1: To apply and link professional terms from technolo in Croatian and English. | gy and organization of road traffic in written and oral commu | nication with the professional public | | | | |
| 2.3. Learning outcomes on the | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | | | | |
| study programme level LO8: To solve problems in traffic by using analytical and / or graphical methods. | | | | | | | |
| LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | |
| | | | Level of LO: | | | | |
| | Learning outcomes by Bloom: (maximum 2 werbs for I | 1- memory, | | | | | |
| | | | 2- understanding, | | | | |



| 2.4. Expected learning outcomes on the course level (4-10 learning outcomes) 2.5. Course content according to detailed curriculum schedule | | Describe the basic concepts in version of the drive engines, concepted by the drive engines, concepted by the final equation of the movement of the vehicle. Evaluate the fuel economy of a result of the stability of the road uctive allignement | 3- application, 4- analysis, 5- evaluation, 6- synthesis. 1, 2 4 6 5 4 | | | | |
|---|-----------------|--|--|---|--|--|-----------------------|
| | No 1. | Thematic unitIntroductorypresentation(introducing students to thecontent and obligations of thecourse).Area of study ofvehiclemotiontheory.Exploitationofvehicletechnical | LO of the course | Content/teaching methods Listen to a lecture. By working independently on a computer, they become acquainted with the course content, obligations, literature and documents on the e-learning course page. Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. | Evaluatio At the colloquium or the exam they define and expla physical quantities and unit | written and oral in the basic terms, | Time needed 3 h |
| | 2. | Performance characteristics related to vehicle movement. Construction of motor vehicles. | 1, 2 | Independent task solving. Listen to a lecture and read literature. The exercises demonstrate how to solve tasks. Independent task solving. | At the colloquium or the exam they define and e concepts; distinguish betw concepts and elements o road vehicles; solve numer specified area; | explain the basic een drive engines, f transmission of | 3 h |
| | 3. | Dynamism. Traction dynamic. Braking dynamic. | 1, 2, 3 | Listen to a lecture and read literature. The exercises | At the colloquium or writt define and explain the distinguish between power | basic concepts; | 3 h |



| | ,, | | 1 | 1 | |
|----|----------------------------------|---------|---------------------------------|---|------|
| | | | demonstrate how to solve tasks. | and elements of transmission of road | |
| | | | Independent task solving. | vehicles; formulate the final equation of | |
| | | | | motion of the vehicle based on the traction | |
| | | | | forces and the resistance of the vehicle; solve | |
| | | | | numerical tasks from the specified area; | |
| | Sliding. Rolling resistance. Air | | Listen to a lecture and read | At the colloquium or written and oral exam | |
| | resistance. Inertia resistance. | | literature. The exercises | define and explain the basic concepts; | |
| | | | demonstrate how to solve tasks. | distinguish between powertrains, and modes | |
| 4. | | 1, 2, 3 | Independent task solving. | and elements of transmission of road | 3 h |
| 4. | | 1, 2, 5 | | vehicles; formulate the final equation of | 5 11 |
| | | | | motion of the vehicle based on the traction | |
| | | | | forces and the resistance of the vehicle; solve | |
| | | | | numerical tasks from the specified area; | |
| | Dynamic factor. Car power | | Listen to a lecture and read | At the colloquium or written and oral exam | |
| | balance. | | literature. The exercises | define and explain the basic concepts; | |
| | | | demonstrate how to solve tasks. | formulate the final equation of motion of the | |
| 5. | | 1, 3, 4 | Independent task solving. | vehicle based on the traction forces and the | 3 h |
| | | | | resistance of the vehicle; evaluate the fuel | |
| | | | | economy of a road vehicle; solve numerical | |
| | | | | tasks from the specified area; | |
| | Dynamic indicator for unequal | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | movement. Dynamic climb | | literature. The exercises | exam they define and explain the basic | |
| | control. Inertia motion with the | | demonstrate how to solve tasks. | concepts; formulate the final equation of | |
| 6. | engine off. | 1, 3, 4 | Independent task solving. | motion of the vehicle based on the traction | 3 h |
| | | | | forces and the resistance of the vehicle; | |
| | | | | evaluate the fuel economy of a road vehicle; | |
| | | | | solve numerical tasks from the specified area; | |
| | Overtaking. Economy. Fuel | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | consumption equation. Method | | literature. The exercises | exam they define and explain the basic | |
| 7. | of normalizing fuel | 1, 3, 4 | demonstrate how to solve tasks. | concepts; formulate the final equation of | 3 h |
| | consumption | | Independent task solving. | motion of the vehicle based on the traction | |
| | | | | forces and the resistance of the vehicle; | |
| | | | | | |



| 1 | | | | 1 | | |
|---|-----|----------------------------------|---------|---------------------------------|---|-----|
| | | | | | evaluate the fuel economy of a road vehicle; | |
| | | | | | solve numerical tasks from the specified area; | |
| | | Stability. Longitudinal | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | | stability. Transverse stability. | | literature. The exercises | exam they define and explain the basic | |
| | 8. | Rotate the vehicle on a | 1, 5 | demonstrate how to solve tasks. | concepts; analyze the stability of the road | 3 h |
| | | horizontal and transverse | | Independent task solving. | vehicle under different operating conditions; | |
| | | inclined path | | | solve numerical tasks from the specified area; | |
| | | Single axle sliding. Force | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | | distribution | | literature. The exercises | exam they define and explain the basic | |
| | 9. | | 1, 5 | demonstrate how to solve tasks. | concepts; analyze the stability of the road | 3 h |
| | | | | Independent task solving. | vehicle under different operating conditions; | |
| | | | | | solve numerical tasks from the specified area; | |
| | | Distribution of tangential | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | | forces across axles | | literature. The exercises | exam they define and explain the basic | |
| | 10. | | 1, 5 | demonstrate how to solve tasks. | concepts; analyze the stability of the road | 3 h |
| | | | | Independent task solving. | vehicle under different operating conditions; | |
| | | | | | solve numerical tasks from the specified area; | |
| | | Constant deceleration curve. | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | | Curves of constant brake grip | | literature. The exercises | exam they define and explain the basic | |
| | | coefficient | | demonstrate how to solve tasks. | concepts; formulate the final equation of | |
| | | | 1 2 5 | Independent task solving. | motion of the vehicle based on the traction | |
| | 11. | | 1, 3, 5 | | forces and the resistance of the vehicle; | 3 h |
| | | | | | analyze the stability of the road vehicle under | |
| | | | | | different operating conditions; solve | |
| | | | | | numerical tasks from the specified area; | |
| | | Possibility of distributing | | Listen to a lecture and read | At the colloquium or the written and oral | |
| | | braking forces. | | literature. The exercises | exam they define and explain the basic | |
| | | | | demonstrate how to solve tasks. | concepts; formulate the final equation of | |
| | 10 | | 1 2 5 | Independent task solving. | motion of the vehicle based on the traction | 2.1 |
| | 12. | | 1, 3, 5 | | forces and the resistance of the vehicle; | 3 h |
| | | | | | analyze the stability of the road vehicle under | |
| | | | | | different operating conditions; solve | |
| | | | | | numerical tasks from the specified area; | |
| | | I L | | 1 | L , , | I |



| | 13. | | | literature. The exercises demonstrate how to solve tasks. Independent task solving. | | At the colloquium or the written and oral exam they define and explain the basic concepts; analyze the stability of the road vehicle under different operating conditions; solve numerical tasks from the specified area; | | 3 h | |
|-------------------------------------|-----------------------|--|-----------------|--|--|---|---|--------------------|-----------|
| | 14. | | | Listen to a lecture and read literature.Listen to a lecture and read exercises1, 5demonstrate how to solve tasks. Independent task solving. | | At the colloquium or the written and oral exam they define and explain the basic concepts; analyze the stability of the road vehicle under different operating conditions; solve numerical tasks from the specified area; | | 3 h | |
| | 15. | Final considerati and preparation f | · • | - | Listen to a le literature. Prepare the exam. | ecture and read e individually for | | | 3 h |
| 3. EVALUATION OF STUD | ENT W | ORK | | | | | | | |
| 3.1. Student obligations | attend of | classes at least 70% | , which is also | a requirement | for obtaining the lect | turer`s signature. St | Student Performance: Full-tim udents can take the final exam i oral part of the exam. | | - |
| 3.2. Student work monitoring | Attending classes 1,5 | | 1,5 | | Written exam | 1 (without colloquiums) | Project | | |
| (enter the share of ECTS credits | Experimental work | | | | Research | | Practical work | | |
| for each activity so that the total | Essay | | | | Report | | Continuous check | 0,5 | |
| corresponds to the course credit | | Colloquiums 1 (without write | | tten exam) | Seminar paper | | Field works or Study trips | | |
| value) | Teachi | ng activities | | | The oral part of exam | 1 | (other) | | |
| | | t workload on all tail tail tail tail tail tail tail | | | _ | semester and is es | timated as going to fieldwork of | or study trips (30 |) hours), |
| 3.3. Student work-load | | Obligation | | | | Hours (estimated |) | | |
| | 1 | . Attending class | | | | 45 | | | |
| | 2 | . Continuous che | ck preparations | | | 15 | | | |



| | | l written exam individual preparation | 30 | |
|---------------------------------|--|---|--|--|
| | 4. Oral exam indivi | Idual preparation | 30 | |
| 4. GRADING SYSTEM | | | | |
| | 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 converte to base units without error. |
| 4.1. Evaluation of written exam | 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 ar completely accurate, clear and ver neat. |
| | Applicationofappropriateequation(formulas)and the finalresult. | 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 derived 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, accurated and thoroughly explains the content of the material, and logically connects an explains the terms and concepts an supports them with examples. Find solutions that were not originally given It notes correlations with relate material. Fluent in professional terminology. |



| | Attending classes > 80% | | > 85% | > 85% > 90% | | 100% | |
|--|-------------------------|--|-----------------|----------------|------------|---------------|--|
| | | 4 points | | 8 poi | nts | 10 points | |
| 4.3. Forming the final grade according to the evaluation elements | Continuous check | 0-5 | 6-10 | 11- | 15 | 16-20 | |
| | Colloquiums/ | 2 | 3 | 4 | | 5 | |
| | Written exam | 50-64,9% | 65-79,9% | 80-89,9% | | 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 | |
| | • • | ired knowledge, skills and (teaching + final exam) | Numerical grade | | ECTS grade | | |
| 4.4 Formation of the final grade | 9 | 0 - 100% | 5 (excellent) | 5 (excellent) | | А | |
| 4.4. Formation of the final grade based on the absolute distribution | 80 | 0 - 89,9% | 4 (very good) | | В | | |
| | 6. | 5 - 79,9% | 3 (good) | | С | | |
| | 6 | 0-64,9% | 2 (sufficient) | 2 (sufficient) | | D | |
| | 50 | 0 - 59,9% | 2 (sufficient) | 2 (sufficient) | | Е | |

5. ADDITIONAL INFORMATION ABOUT COURSE

| 5.1. Compulsory literature | Title | Number of copies in the library | Availability via other media |
|--|---|---------------------------------------|------------------------------|
| (available in the library and via other media) | Perše, S., Višnjić, V.: Mechanical engineering in traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2005. (selected chapters) | 10 | |
| | 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 | |
| 5.2. Additional literature (at the | Courses lectures, also lectures and exercises of the course Technical Mechanics. | - | on-line (e-learning) |
| moment of changes and/or | Rotim, F.: Elements of road traffic safety, Book 2, Scientific council for traffic Croatian national | 1 | on-me (e-leanning) |
| amended of study programme) | academy of science and art, Zagreb, 1991. | | |



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



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

| 1. GENERAL INFORMATION | I. GENERAL INFORMATION | | | | | | | |
|--|--|---|---|--|--|--|--|--|
| 1.1. Course title | FREIGHT-DISTRIBUTIONAL CENTRES AND TERMINALS | 1.8. Course code at ISVU | 140777 | | | | | |
| 1.2. Course lecturer | Ana-Mari Poljičak, grad. eng. traff., senior lecturer | 1.9. Course code at MOZVAG | - | | | | | |
| 1.3. Assistants and/or associates | - | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (30 + 0 + 30 + 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes \Box no | | | | | |
| 1.7. Credit point (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 % | | | | | |

| 2. COURSE DESCRIPTION | | | | | |
|---|--|--|--|--|--|
| 2.1. Course objectives | The goal is to provide students with theoretical knowledge: Define basic goods-distribution terms; Understand the division, structure and function of goods-distribution centers and terminals; Understand the technical and technological characteristics of goods-distribution centers and terminals and the design and planning of management systems; Apply the learned content of this course in business practice. | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF | | | | |
| | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. | | | | |
| 2.3. Learning outcomes on the | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. | | | | |
| study programme level | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. | | | | |
| | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. | | | | |



| | LO10: To compare and choose technical and technological solutions in traffic and/or goods flows. | |
|---------------------------------|--|---|
| | LO13: To track trends in the development of technique, technology and safety in traffic. | |
| 2.4. Expected learning outcomes | Learning outcomes according to Bloom's taxonomy: (maximum 2 werbs for LO) | Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis. |
| on the course level | demonstrate knowledge and understanding of the content of the course by defining and describing basic goods - distribution concepts, | 1, 1 |
| | 2. comment on the fundamental characteristics of the goods centers and terminals in the transport system, | 4 |
| | 3. integrate and critically evaluate technological processes in goods distribution centers and terminals, | 3, 5 |
| | 4. to choose transshipment facilities at terminals according to the type of goods and technological procedures, | 3 |
| | 5. distinguish between types of storage and technological storage procedures. | 2 |
| | 6. present the acquired knowledge independently and in a team. | 6 |

| | Constructive allignement | | | | | | | | |
|---|--------------------------|--|------------------|--|------------|----------------|--|--|--|
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | Time needed | | | |
| 2.5. Course content according to detailed curriculum schedule | 1. | Introduction into the course and detailed plan. | - | They listen to a lecture. During the individual work on the computer at the seminar teaching, they are introduced to the course content and documents on the e-learning page of the course. at the seminar teaching, they are introduced to the methodology of writing seminar papers. They choose the topic of the seminar papers and the brainstorming method and the method of discussing the selected topic are applied. | - | 2 h | | | |



| 1 | | | | | | |
|---|----|--|---------|--|---|-----|
| | | Goods transport centers and types of goods transport centers | 1, 2, | They listen to a lecture and read literature. | At the colloquium or the written and oral exam define the basic goods- distribution terms. They describe the role and difference of goods- distribution centers, warehouses and goods-transport centers and know how to list and explain logistic activities of goods-transport centers. | 2 h |
| | 2. | Field teaching VELPRO Šibenik. | 2, 3 | They listen to a lecture. (Touring the goods distribution center. Getting acquainted with the technology of receiving and distributing goods, ways of storing and storing goods, and commissioning goods for distribution. The method of experiential learning and self- discovery is applied. At seminar classes, they make seminar papers individually or in pairs and discuss the given topic . | At the colloquium or the written and oral exam they can explain the role of goods distribution. | 6 h |
| | 3. | Terminals and terminal types | 1, 2 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. | At the colloquium or the written and oral exam they define the basic terms of the terminal. They know how to list and distinguish types of terminals. | 8 h |
| | 4. | Port Terminals. Multifunctional and universal terminals. | 1, 2, 3 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. The brainstorming method and the method of discussing the topic discussed are applied in the seminar teaching. | At the colloquium or the written and oral exam they know how to define and enumerate port terminals. Describe the role and characteristics of multipurpose and universal terminals. Seminar paper created and presented (using computer programs independently). | 6 h |



| 1 | | | | | | |
|---|----|-----------------------------------|------------|--|---|------|
| | 5. | Container terminals. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can define what containerization and container is, and list the advantages and disadvantages of containerization. Enumerate and describe container types. Describe container port terminals, their technological processes, types of warehouses and list loading and unloading devices. Seminar paper created and presented (using computer programs independently). | 10 h |
| | 6. | Container terminals. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or written and oral exam knows enumerate the types of container ships at the colloquium or the written and oral exam. Define and describe land-based container terminals. Explain Huckepack technologies and list loading and unloading devices. Describe storage types. Seminar paper created and presented (using computer programs independently). | 10 h |
| | 7. | Ro-Ro terminals. Colloquium I. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or written and oral exam knows define and describe Ro- Ro terminals, explained by technological processes of work on them, enumerate and describe the loading and unloading devices and describe storage. List the advantages and disadvantages of Ro-Ro technology. | 8 h |



| 1 | | | | | | |
|---|-----|---|------------|--|--|------|
| | 8. | LUF terminals. LASH terminals. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or written and oral exam knows define and describe LUF and LASH terminals explain the technological processes of work on them, enumerate and describe the loading and unloading devices and describe storage. List the advantages of the LUF system and the advantages and disadvantages of the LASH system. List the types of LASH ships and describe the technology of loading / unloading barges on ships. Seminar paper created and presented (using computer programs independently). | 8 h |
| | 9. | Terminals for the transhipment of dry and bulk cargo. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they know how to define and describe ways of transshipment in ports and terminals. Describe the coal and iron ore transhipment terminal and the phosphate transhipment terminal and explain their technological processes. Enumerate loading and unloading devices and explain storage of coal and iron ore and phosphate. Seminar paper created and presented (using computer programs independently). | 10 h |
| | 10. | Terminals for the transhipment of dry and bulk cargo. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents | At the colloquium or the written and oral exam they can define and describe cereals and cement transshipment terminals. Explain their technological processes of work and the list of | 10 h |



| 2 | | | | | | |
|---|-----|------------------------------|------------|--|--|------|
| | | | | the acquired knowledge and presents their own | loading unloading devices. Explain | |
| | | | | ideas, and ways to solve problems. In the group | storage of cereals and cement. Seminar | |
| | | | | work on seminar teaching, the brainstorming | paper created and presented (using | |
| | | | | method and the discussion method on the topic | computer programs independently). | |
| | | | | are applied. | | |
| | | | | They listen to a lecture. (Visiting Split RO-RO, | | |
| | | | | container and truck terminals, coastal and | | |
| | | | | refrigeration warehouses, bulk cargo terminals, | | |
| | | | | timber terminals, iron terminals. Getting | | |
| | | | | acquainted with technological processes at | At the colloquium or written and oral | |
| | | Field teaching Port of Split | | terminals, warehousing and warehousing of | examination know to describe and | |
| | 11. | and LDC KONZUM in | 2, 3, 4, 5 | goods and transhipment machinery. the Konzum | explain the technological processes of | 4 h |
| | | Dugopolje. | | distribution center monitoring the process of | work on terminals, state of loading | |
| | | | | storing and storing different types of goods in the | unloading devices and explain storage. | |
| | | | | rack warehouse and cold store and preparing and | | |
| | | | | controlling the goods before distribution. The | | |
| | | | | experiential and self-discovery methods are | | |
| | | | | applied. | | |
| | | | | | At the colloquium or the written and | |
| | | | | | oral exam they know how to define | |
| | | | | They listen to a lecture and read literature. At the | and describe the terminals for | |
| | | | | seminar teaching, they individually explore the | transhipment of oil and petroleum | |
| | | | | content of this topic area by searching the | products and terminals for | |
| | | | | database, and on the basis of it and reading the | transhipment of liquefied gases. | |
| | 10 | Terminals for the | 1 2 4 5 | literature, create a seminar paper that presents | Explain their technological processes | 111 |
| | 12. | transhipment of liquid and | 1, 3, 4, 5 | the acquired knowledge and presents their own | of work and the list of loading | 11 h |
| | | liquefied gases. | | ideas, and ways to solve problems. In the group | unloading devices. List the types of | |
| | | | | work on seminar teaching, the brainstorming | storage and explain storage. | |
| | | | | method and the discussion method on the topic | Enumerate and describe systems with | |
| | | | | are applied. | buoys for cargo handling. Seminar | |
| | | | | ~~ | paper created and presented (using | |
| | | | | | computer programs independently). | |
| | | 1 | | 1 | | |



| | 13. | Dangerous goods terminals. Terminals for the transhipment of heavy and very heavy loads. The terminals for the transhipment of wood and wood products. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or written and oral exam knows define and enumerate dangerous cargoes. List the systems by which the classification of the transport of dangerous goods is carried out. Describe the technological process of handling hazardous materials. Give an example for very heavy loads. List and describe methods for loading heavy loads on board. Enumerate loading / unloading devices and explain storage of heavy loads. Describe the technological process of work on the terminal for wood and wood products. Enumerate the loading and unloading devices and describe storage at the terminal for wood. Seminar paper created and presented (using computer programs independently). | 12 h |
|--|-----|--|------------|---|---|------|
| | 14. | Terminals for animal transshipment. Terminals for the transshipment of southern fruit and food products. Colloquium II. | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam, they are able to list the factors on which the transport, transhipment and storage of perishable products depends. List the groups of frozen foods and give an example. Explain the technological process of working at a food product terminal. List the infrastructure and superstructure that the animal terminal must have at its disposal. Describe the technological process of work and the | 8 h |



| 1 | | | | | | | | |
|---|--|---|--|--|---|--|--|------------|
| | | | | | | list of loading unloading | ; devices for | |
| | | g considerations. and preparing for | | They listen to a lecture for the exam. | re and prepare individually | animals. | 35 | h |
| 3. EVALUATION OF STUDEN | T WORK | | | | | | | |
| 3.1. Students` obligations | Part-time students have achieved duri • From 0 • From 25 extraordir • More the Students can take to participation in cla | are required to attend ng the course: 24.9% of ECTS credit -49.9% - are assessed to ary exam period; an 50% - students have he final exam in the co sses and development a | a class of at a ts - they are r by FX (insuff the right to t purse in two w and presentat | least 50%. All stude rated F (unsuccessfu ficient) and must pas take the final exam. ways: a) during the c tion of seminar work | ents must create, present ar and cannot earn ECTS cr s and pass the written exan ourse of teaching through o | for all full-time students attend ad positively colloquy seminated redits and must re-enroll in the total (test). Written exam (test) c continuous monitoring of stud uring class (active participati). | ar paper. Students v ne next academic yea can be held in regula dents (active | who ar; |
| | Attendance | | Writte | en exam | 3 (without colloquia) | Project | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Resea | urch | | Practical work | | |
| for each activity so that the total number of ECTS points | Essay | | Repor | rt | | Continuous examination | | |
| corresponds to the credit score of the course) | Colloquium | 3 (without written exam) | Semin | nar paper | 0,5 | Other | | |
| | Class activity | 0,5 | Oral e | exam | 1 (without colloquia) | Other | | |
| 3.3. Student workload | Student workload on all bases is 1 ECTS credit 30 semester hours and is esti Obligation 1. Active class attendance 2. Designing a seminar paper and presentation | | | | estimated as: Hours (estimated) 60 20 | | | |
| | 3. Preparin | g colloquia or exams th | hrough indivi | idual work | 70 | | | |



| 4. GRADING SYSTEM | | | | | | | | |
|--|--------------------------|--|---|---|--|---|--|--|
| 4.1. Evaluation of a of seminar work | Element of evaluation Ba | | s | | Satisfying | | Above average | |
| | Organization | The paper is not org order and lacks struc | • | 0 | | the distinute the text main | distinction between the introduction, the | |
| | Terminology, v style | writing Words and expression official terminology. is not appropriate, the long, of a modest vo frequent and repeat errors. | The writing style e sentences are too cabulary and with | 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. | | ag style cture is ate and are offic writi are of | 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 | encing The sources are not references do not fit a cursory approach topic. | he topic and show | The sources are listed but incomplete and with errors. The references are relevant to the topic and show a satisfactory research attitude. | | how a complete | and consistently listed. The references | |
| | | Bad | | Satisfying | | | Above average | |
| 4.2. Grading of the colloguium / written and oral exam | | | t know or apply basic s not know how to apply | | he basic concepts and without rts new knowledge, understands plains the terms and concepts that examples. and accur of the explains with origin | | wledge is at the level of analysis, synthesis evaluation. It observes the legality, rately and thoroughly explains the content me material, and logically connects and usins the terms and concepts that it supports examples. Finds solutions that were not nally given. It notes correlations with ed material. | |
| 4.3 Forming the final grade | Active | 70-75% of the presence | 76-86% of | 76-86% of the presence | | the presence | Case studies resolved | |
| 4.3. Forming the final grade according to the evaluation | attendance | 2 points | 4 p | 4 points | | ints | 10 points | |
| elements | Seminar paper | 2 | | 3 | | ļ | 5 | |
| | Sommer puper | 5 points | 7 p | 7 points | | ints | 10 points | |



| | Examination / | 2 | 3 | 4 | | 5 | | |
|---|--|------------|------------------------------------|---------------------------------|----------------|---------------------------|--|--|
| | Written 50-64,9% | | 65-79,9% | 80-89,9% | | 90-100% | | |
| | examination | 25 points | 30 points | 35 points | | 40 points | | |
| | Oral part of the | 2 | 3 | 4 | | 5 | | |
| | exam | 25 points | 30 points | 35 points | | 40 points | | |
| | Percentage of acquired knowledge, skills and competences (teaching + final exam) Number rating | | | | | ECTS grade | | |
| | | 90-100% | 5 (excellent) | 5 (excellent) | | А | | |
| 4.4. Formation of final grade based on absolute distribution | | 80-89,9% | 4 (very good) | · · · · · | | | | |
| based on absolute distribution | | 65 - 79,9% | 3 (good) | | С | | | |
| | | 60-64,9% | 2 (sufficient) | | D | | | |
| | | 50-59,9% | 2 (sufficient) | | Е | | | |
| 5.1. Required literature | | Ti | Number of copies in the library | Availability via other media | | | | |
| (available in the library and through other media) | Poljičak, AM., Ljubić Hinić, M.: Freight Terminals - Authorized script, Polytechnic of Šibenik, Šibenik, | | | | in the library | media Available online | | |
| | 2016. | | | | | | | |
| 5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program) | Dundović, Č.: Freight terminals, Faculty of Maritime Studies, University of Rijeka, Rijeka, 2002. Mlinarić T. J.: Freight-distributional centres, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2013. | | | | 3 | | | |
| | Dundović, Č., Kesić, B.: Technology and organization of ports, Faculty of Maritime Studies, University of Rijeka, Rijeka, 2001. Kirinčić, J.: Ports and terminals, School book, Zagreb, 1991. | | | | 2 3 | Available online | | |
| 5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences | Quality control of students' work and the acquisition of necessary knowledge and skills will be ensured through interactive work. Keeping records of students' attendance and activity in the classroom and information obtained about student progress through the midterm will provide the information needed for further guidance to students in order to increase their work efficiency. Students will be instructed in their rights and obligations as well as working methods and required literature. Quality assurance system indicators: Student survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association. | | | | | | | |



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



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

| 1. GENERAL INFORMATION | | | | | | |
|--|---|---|--|--|--|--|
| 1.1. Course title | TECHNOLOGY AND ORGANIZATION OF PUBLIC CITY TRANSPORT | 1.8. Course code at ISVU | 140782 | | | |
| 1.2. Course lecturer | MSc. Martina Ljubić Hinić, 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | \mathbf{X} yes \Box no | | | |
| 1.7. Credit point (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore 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 programme level | LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English. |
| | LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders. |
| | LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions. |



| | LO6: Analyze and interpret relevant road transport facts needed to reach conclusions. | | | | | | |
|--|--|---|--|--|--|--|--|
| | LO9: Assess and organize processes in the field of road transport and / or transport logistics. | | | | | | |
| | LO13: Follow trends in technology, technology and traffic safety. | | | | | | |
| 2.4. Expected learning outcomes on the course level | Learning outcomes according to Bloom's taxonomy: | Level of LO: 1 - remembering, 2 - understanding, 3 - application, 4 - analysis, 5 - evaluation, 6 - synthesis | | | | | |
| | 1. to define and describe the public transportation system | 1, 1 | | | | | |
| | 2. to explain and distinguish between the technical and technological features of the public transport system | 2, 4 | | | | | |
| | 3. to analyze and identify the wishes and behaviors of travelers | 4, 1 | | | | | |
| | 4. to distinguish conventional from innovative passenger transport technologies | 4 | | | | | |
| | 5. to identify and connect the needs and opportunities for improving public transport organization in cities | 1, 5 | | | | | |
| | 6. to use materials and tools to search scientific and professional literature in their native and English languages | 3 | | | | | |
| | 7. to present the acquired knowledge, ideas, problems and solutions independently and in a team | 6 | | | | | |

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



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



| 6 | 6. | Urban passenger transport technology. | 1, 2, 3, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they can state the need and role of public transport, define the main technologies and modes of traffic in cities and state the consequences of greater representation of individual transport in relation to public transport. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport. | 3 h |
|---|----|---|---------------------|---|--|------|
| 7 | 7. | Models of passenger behavior. Planning of public urban passenger transport. | 1, 2, 3, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define the levels of traffic planning and explain the process of planning public transport taking into account the wishes of passengers. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport. | 3 h |
| 8 | 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 | 9. | Public passenger transport vehicles. | 1, 2, 3, 5, 6 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and state the types and types of public transport vehicles and their technical and technological characteristics that are important for the establishment and organization of public transport systems. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport. | 3 h |



| 10. | Conventional modes of public transportation. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and state the types and methods of conventional public transport and their technical, technological and exploitative characteristics, which are important for the establishment and organization of the public transport system. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport. | 3 h |
|-----|--|------------------------|---|--|-----|
| 11. | Conventional modes of public transportation. | 1, 3, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and state the types and methods of conventional public transport and their technical, technological and exploitative characteristics, which are important for the establishment and organization of the public transport system. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport. | 3 h |
| 12. | Network of public transport lines. | 1, 3, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and describe the types of networks and ways of providing the route of lines, to specify and analyze the factors that determine the quality of the network of lines. Seminar work is organized in groups, with discussion and proposing measures for possibilities of improving public transport. | 3 h |
| 13. | Urban expansion, telecommuting and transportation. Paratransit. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, | 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 | 3 h |



| | | | | come up with thei to solve problems. | r own ideas, and ways | effects and influence on transportation system in cities. Seminar work is organized in discussion and proposing a possibilities of improving public | groups, with measures for | |
|---|--|--|-----------------------|---|--------------------------------------|---|--|------|
| | 14. tecl | novative transportation chnologies. d Colloquium. | 1, 2, 3,4, 5, 6, 7 | They listen to a individually for the | lecture and prepare e colloquium. | In colloquium or written and or define and describe the forms transport technologies, and effects and impact on the pu system. | cal exams they of innovative explain the | 38 h |
| | 15. Rej | ncluding considerations. peating and preparing for e exam. | 6, 7 | They listen to a individually for the | e lecture and prepare exam. | - | | 38 h |
| 3. EVALUATION OF STUDEN | T WORK | | | | | | | |
| 3.1. Students` obligations | In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam). | | | | | | | |
| 3.2. Monitoring student work | Attendanc | | Writ | ten exam | 1 (without colloquia) | Project | | |
| (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course) | Experimer work | ntal | Rese | arch | | Practical work | | |
| | Essay | | Repo | ort | | Continuous examination | | |
| | Colloquiu | Im 1 (without written exam) | Semi | inar paper | 1 | Other | | |



| | Class activity 1 | Or | al exam | 1 | 0 | ther | |
|--|--|---|--|--|--|--|---|
| 3.3. Student workload | | all bases is 1 ECTS credit 30 d-term / midterm exam 115 h | | and is estimated | as: Attendance 30 | h, Design of | f seminar work and presentation 15 h, |
| 4. GRADING SYSTEM | | | | | | | |
| | Element of evaluation | on Bad | | 5 | Satisfying | | Above average |
| 4.1. Grading of seminar work | Organization | The paper is not organ order and lacks structu | - | distinction bet | ell structured with a tween the introdu y of the text an | ttion, distinued the main | paper is well structured with a clear nction between the introduction, the body of the text and the conclusion, ch are logically interconnected. |
| | Terminology, writ style | Words and expressions official terminology. T is not appropriate, the s long, of a modest voca frequent and repeate errors. | The writing style sentences are too abulary and with | official termin is appropriate, clear, the vocal | pressions are in line ology. The writing the sentence struct bulary is appropria grammatical errors. | e with g style ture is te and te and rich | ds and expressions are aligned with cial terminology and show an erstanding of their meaning. The ing style is excellent, the sentences clear and concise, the vocabulary is and there are no grammatical errors. |
| | Citing and reference references | ing The sources are not la references do not fit the a cursory approach t topic. | e topic and show | and with erro | re listed but incor ors. The reference he topic and sh search attitude. | ow a comj | sources are accurately, completely consistently listed. The references appropriate, their list is "rich" and prehensive and shows a detailed arch approach. |
| | | Bad | | Satisfying | | | Above average |
| 4.2. Grading of the colloguium / written and oral exam | understanding. Does terms and concepts. I | t responds by memory, without a deeper nderstanding. Does not know or apply basic erms and concepts. Does not know how to apply or explain the contents of the course with | | rts new knowled | and evaluation. It observes the accurately and thoroughly explains the terms and concepts that examples. It is not a concept that it is the terms and concept that it is the terms and concepts that it is the ter | | is at the level of analysis, synthesis ation. It observes the legality, nd thoroughly explains the content of , and logically connects and explains and concepts that it supports with Finds solutions that were not iven. It notes correlations with related |
| | Active attendance | 70-75% of the presence | 76-86% of t | he presence | 87-100% of th | e presence | Case studies resolved |



| And a second | | | | | | | | |
|--|---|--|---------------|-------------------------|---------------------|---------------------------------|------------------------------|--|
| | | 0 points | | 0 points | 0 poin | ts | 0 points | |
| | а. : | 2 | | 3 | 4 | | 5 | |
| | Seminar paper | Made and handed over | Made | and handed over | Made and han | ided over Ma | de and handed over | |
| 4.3. Forming the final grade according to the evaluation elements | Examination / | 2 | | 3 | 4 | | 5 | |
| | Written | 50-64% | | 65-80% | 81-909 | % | 91-100% | |
| | examination | 25-32 points | | 33-40 points | 41-45 po | oints | 46-50 points | |
| | Oral part of the | 2 | | 3 | 5 | | 5 | |
| | exam | 25-32 points | | 33-40 points | 41-45 po | oints | 46-50 points | |
| | Percentage of acquired knowledge, skills and competences (teaching + final exam) | | | Number rating | | ECTS grade | | |
| | | 90 - 100% | 5 (excellent) | | А | | | |
| 4.4. Formation of final grade based on absolute distribution | | 80-89,9% | | 4 (very good) | | В | | |
| based on absolute distribution | | 65 - 79,9% | | 3 (good) | | С | | |
| | | 60-64,9% | | 2 (sufficient) | | D | | |
| | | 50 - 59,9% | | 2 (sufficient) | | Е | | |
| 5. ADDITIONAL INFORMAT | ION ON THE SUB. | ІЕСТ | | | | | | |
| 5.1. Required literature (available in the library and | | Tit | tle | | | Number of copies in the library | Availability via other media | |
| through other media) | | Štefančić, G.: Technology of public (urban) city traffic, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2008. (selected chapters) | | | | | No | |
| 5.2. Supplementary literature (at | Štefančić, G.: Tec | hnology of public (urban) city th | raffic II, F | aculty of transport and | d traffic sciences, | | | |
| the time of the submission of | University of Zagre | eb, Zagreb, 2010. | | | | 0 | No | |
| changes and / or additions to the | Modern traffic, Jou | rnal of Croatian scientific society | y for traffic | c, Zagreb | | 0 | No | |
| study program) | Banister, D. : Tran | sport and Urban Development, E | & FN Spo | on, New York, 1995. | | 0 | Yes | |
| study program) | Courese lectures | | | | | | | |



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



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

| 1. GENERAL INFORMATI | ON | | | | | |
|---|---|---|---|--|--|--|
| 1.1. Course lecturer title | ENGLISH LANGUAGE IV | 1.8. Course code in ISVU | 140784 | | | |
| 1.2. Course title lecturer | MSc. Ivana Kardum Goleš, 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) | (15 + 30 + 0 + 0) | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | |
| 2. COURSE DESCRIPTION | | | | | | |
| 2.1. 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; qual | fication level 4.2 according to the CROQF, Completed course | e English language III | | | |
| 2.3. Learning outcomes on the study programme level | LO1: To apply and link professional terms from in Croatian and English. | technology and organization of road traffic in written and ora | l communication with the professional public | | | |



| | LO2: ' | To organize and implement team | work, and crit | ically judge the opinions and attitudes | of team members. | | |
|---|--------|---|--|--|---|---|----------------|
| | LO3: ' | To individually and responsibly s | earch, interpre | t and integrate the relevant literature r | needed to make decisions. | | |
| | Lear | rning outcomes accroding to the | Level of LO: 1- remembering, 2- understanding 3- application, 4- analysis, 5- evaluation, 6- synthesis | | | | |
| | | written and oral communicat | ion | e professional terminology of English | road traffic and use them in | 2, 3 | |
| | | 2. to create CV (Europass temp | 3, 4, 6 | | | | |
| | | to interpret and use tenses in to develop a longer essay wit | | | | 3,4 | |
| | | 5. to present own ideas for deve | - | | | 5, 6 | |
| | | 1 | 1 | in the subjects of the course, to expres | s one own opinions | 6 | |
| | | to compare and evaluate diffe | | | | 5 | |
| | | 8. to analyse complex texts and | | | | 4 | |
| | | 9. to use part of the general lang | guage compete | ency at levels B1/B2 | | 6 | |
| | Cons | structive allignement | | | | | |
| | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | | Time needed |
| 2.5. Course content according to detailed curriculum schedule | 1. | Introduction into the course and detailed plan. | - | Listen to lectures. Work independently on computer, get to know course content and elearning documents. | - | | 2 h |
| | 2. | Early Trading Conditions – Tenses CV – Europass template | 1, 2, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written an applied grammatical structures are evaluated, understand, app from the professional terminolo traffic and use them in | on texts and tasks ply and link terms ogy of English road | 4 h |



| | | | | communication verb tenses are interpreted in a real linguistic context, use part of other language competences at B1 level. | |
|----|---|------------|---|---|-----|
| 3. | Travel And Traffic Information - The Sequence Of Tenses | 1, 3, 4, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 4 h |
| 4. | Public Transport - Direct And Indirect Speech - Statements Past | 1, 3, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 4 h |
| 5. | Transport And Tourism - Direct And Indirect Speech – Questions Past | 1, 3, 6, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign | 4 h |



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



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



| | | | | other countries, analyze medium complex texts and solve tasks, use part of other language | |
|-----|---|------------------------------|---|---|------|
| | | | | competences at B1 level. | |
| 11. | The History Of Railways - Connective Relative Clauses | 1, 3, 5, 6, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language | 10 h |
| 12. | The Telephone Of Today And Tomorrow - Business Letters – Abbreviations In Business English | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. Use multimedia and internet. Solve exercises. | competences at B1 level. In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of other countries, analyze medium complex texts and solve tasks, use part of other language competences at B1 level. | 10 h |
| 13. | The Modern Wonder Of Electronics - Business Letters – Job Interview | 1, 2, 3, 4, 5, 6, 7, 8, 9 | Listen to lectures and read literature. During lectures individually research the content of this thematic field by searching data bases, presentt acquired knowledge, express their own | In colloquium or written and oral exams the applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real linguistic context, can communicate in foreign languages within the course topic, express their own opinions, present their own ideas related to | 4 h |



| | | | | ideas and ways of problem solving. Brainstorming, discussion. Solve exercises. | the development of transport solutions to develop a longer essay within course topics, comparing and evaluating different solutions in the traffic of | | | | | | |
|---------------------------------|--------|--------------------------------------|---------------------------------|--|---|------|--|--|--|--|--|
| | | | | | other countries, analyze medium complex texts and solve tasks, use part of other language | | | | | | |
| | | | | | competences at B1 level. | | | | | | |
| | | | | | In colloquium or written and oral exams the | | | | | | |
| | | | | Listen to lectures and read literature. During lectures | applied grammatical structures on texts and tasks are evaluated, verb tenses are interpreted in a real | | | | | | |
| | | | | individually research the content of | linguistic context, can communicate in foreign | | | | | | |
| | | | 12456 | this thematic field by searching | languages within the course topic, express their | | | | | | |
| | 14. | Problems Of Modern Transportation | 1, 3, 4, 5, 6, 7, 8, 9 | data bases, presentt acquired knowledge, express their own | own opinions, present their own ideas related to the development of transport solutions to develop | 6 h | | | | | |
| | | | .,.,. | ideas and ways of problem solving. | a longer essay within course topics, comparing | | | | | | |
| | | | | Brainstorming, discussion. Solve exercises. | and evaluating different solutions in the traffic of other countries, analyze medium complex texts | | | | | | |
| | | | | exercises. | and solve tasks, use part of other language | | | | | | |
| | | | | | competences at B1 level. | | | | | | |
| | | | | | In colloquium or written and oral exams the applied grammatical structures on texts and tasks | | | | | | |
| | | | | | are evaluated, verb tenses are interpreted in a real | | | | | | |
| | | | | | linguistic context, can communicate in foreign | | | | | | |
| | | | 1, 2, 3, 4, 5, | | languages within the course topic, express their own opinions, present their own ideas related to | | | | | | |
| | 15. | Revision – II colloquium | 6, 7, 8, 9 | Solve exercises. | the development of transport solutions to develop | 10 h | | | | | |
| | | | | | a longer essay within course topics, comparing and evaluating different solutions in the traffic of | | | | | | |
| | | | | | other countries, analyze medium complex texts | | | | | | |
| | | | | | and solve tasks, use part of other language | | | | | | |
| | | | | | competences at B1 level. | | | | | | |
| 3. EVALUATION OF STUDENT | rs` wo | ORK | 3. EVALUATION OF STUDENTS" WORK | | | | | | | | |

3. EVALUATION OF STUDENTS' WORK



| 3.1. Students` obligations | 70% is required. P consideration is gi participation in tea evaluation are the written part of the outcomes are: essa oneself about the c | n accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 0% is required. Part-time students are required to attend classes at least 50%. The students` acquired knowledge is tested during the course classes. Special onsideration 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 valuation 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 nuccomes are: essays, objective type assignments, discussion, roleplay, presentation creation, etc. The obligation of each student is to regularly inform neself about the course. All notices about maintenance or eventual postponement of teaching will be published on the web site of the Polytechnic of Šibenik nd the e-learning page of the course, where all the information on the course as well as the teaching materials and the list of literature are also available. | | | | | | | | |
|---|---|--|--|--------------------------------------|---|--|--|--|--|--|
| | Attendance | 0,5 | Written exam | 1 (without colloqu | ia) Project | | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | Practical work | | | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | Continuous examination | | | | | |
| corresponds to the credit score of the course) | Colloquium | 1 (without written exam) | Seminar paper | | Other | | | | | |
| | Class activity | 0,5 | Oral exam | 1 | Other | | | | | |
| 3.3. Student workload | 1. Attending | g classes and exercises 4 | credit is 30 hours in a seme 5 hours ough individual work 45 ho | | as: | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | | |
| 4.1. Grading seminar papers | - | | | | | | | | | |
| | Unsa | tisfactory | Satisfacto | ory | Abov | e average | | | | |
| 4.2. Grading colloquia/ written and oral exam | understanding. D basic terms and know how to a | nory, without a deeper loes not know or apply concepts. Does not apply or explain the burse with examples. | Reproduces the basic cor difficulty imparts r understands the material, and concepts supported wi | new knowledge, explains the terms | evaluation. Observes the thoroughly explains the cont | el of analysis, synthesis and principles, accurately and ent of the material, and logically rms and concepts supported with | | | | |



| | Active course | 70-75% of attendance | 76-86% of attendance | 87-100% of attendance | Maksimum bodova |
|-------------------------------|--|----------------------|----------------------|--|-----------------|
| | attendance | 3 points | 7 points | 20 points | 20 bodova |
| | Seminar paper | | | | |
| 4.3. Final grade according to | | 2 | 3 | 4 | 5 |
| evaluation elements | - | 50-64,9% | 65-79,9% | 80-89,9% | 90-100% |
| | cxam | 25 points | 30 points | 35 points | 40 bodova |
| | Oral avom | 2 | 3 | 4 | 5 |
| | Orar exam | 25 points | 30 points | 35 points | 40 bodova |
| | | | Numerical grade | ECTS | S grade |
| 2 Final grade according to | Active course attendance 70-75% of attendance 76-86% of attendance 87-100% of attendance attendance 3 points 7 points 20 points Seminar paper | | A | | |
| bsolute division | | 80 - 89,9% | 4 (very good) | 7 points 20 points 3 4 3 4 5-79,9% 80-89,9% 0 points 35 points 3 4 0 points 35 points 3 4 0 points 35 points 3 4 0 points 35 points 10 points 35 points 11 A 12 (xcellent) 4 (very good) 13 (good) 2 (satisfactory) 2 (satisfactory) 2 (satisfactory) 12 (satisfactory) 14 Number of copies in | В |
| | | | | | С |
| | | | - | | |
| | | 50-59,9% | 2 (satisfactory) | | E |
| . ADDITIONAL COURSE IN | FORMATION | | | | |
| | | Title | | Number of copie | |

| 5.1. Compulsory literature | Title | the library | other media | |
|----------------------------|--|-------------|-------------|--|
| other media) | Katja Bošković Gazdović: "English textbook of Transport I", Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2002. (selected chapters) | 10 | Х | |



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



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

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

| 2. COURSE DESCRIPTION | | | | | | |
|--|---|--|--|--|--|--|
| 2.1. Course objectives | The main objective of the course is to provide students with the skills and abilities to understand main economic relationships and processes in the transport ystem. | | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF. | | | | | |
| | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. | | | | | |
| 2.3. Learning outcomes on the study programme level | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. | | | | | |
| study programme rever | LO5: To apply basic legal and economic principles in organization with socially responsible management in technical-technological subjects. | | | | | |
| 2.4. Expected learning outcomes on the course level | Learning outcomes towards Bloom's taxonomy: (up to two verbs per LO) | LO Level: 1- Recapture, 2- Understanding, 3- Application, 4- Analysis, 5- Evaluation, | | | | |



| | | | | | | 6- Synthesis | |
|---|--------|---|------------------|--|---|--|----------------|
| | 1. | 2 | | | | | |
| | 2. | - | 1 | nomics and the transport market from a macro nomics and the transport market from a micro | - | 2 | |
| | 3. | To critically evaluate cost comp | onents and co | onnect them with the overall business of trans | port companies. | 5,4 | |
| | 4. | To analyze business processes o | f transport co | mpanies. | | 4 | |
| | Constr | uctive alignment | | | | | |
| | | | | | | | |
| | no. | Thematic ensemble / Lecture Topic | LO of the course | Content / Teaching Method | Evaluation | 1 | Time needed |
| | | Introduction into the course and detailed plan. | - | Listen to the lecture. By independent work on the computer students get acquainted with course content and documents on the e-learning course page. | - | | 1 h |
| 2.5. Course content according to detailed curriculum schedule | 1. | Characteristics of transport economics and transport market. | 1, 2 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | students can: define and describe the ba concepts of transport economics; expl. the characteristics of the transport mark differentiate transport need from transp service; give examples of complementar | | 2 h |
| | 2. | Economic sense and practical importance of transport division | 1, 2 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written students can enumerate the and criteria for the divisi They can explain how the division of labor and spect can use critical thinking importance of accessibilities services. | the main factors on of transport. transport affects cialization. They to explain the | 4 h |
| | 3. | The role and impact of transport on economic development | 1, 2 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies | In colloquium or written students can explain the ro the circulation in macroe | le of transport in | 4 h |



| 1 | | | | | | |
|---|----|--|---------|--|--|-----|
| | | | | thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | can explain how traffic affects production and how it functionally links factors of production. | |
| | 4. | Creating revenues from transport services and the impact of prices on the demand for transport services | 1, 5 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams students can explain the value structure of the transportation service. They know how to analyze the price / demand ratio for transportation. They know how to sketch and explain the curve of total income. | 4 h |
| | 5. | Transport cost analysis. | 2, 3, 4 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they can explain main trasport costs. They differentiate costs with respect to capacity utilization. They know how to calculate the selling price of a transport service. | 4 h |
| | 6. | Transport infrastructure costs. | 2, 3 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they are able to define the characteristics of transport infrastructure. They know how to list and explain major revenue instruments for financing road infrastructure. They know how to list and explain the main sources of revenue for road construction. | 4 h |
| | 7. | Tariffs and tariff systems. | 2, 3 | Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and | In colloquium or written and oral exams they can define the term tariffs in transport. They can define and explain factors that affect the amount and ormation of tariffs. | 6 h |



| 1 | | | | | | |
|---|-----|-------------------------------------|---------|---|---|-----|
| | | | | presenting adopted knowledge and ideas, discuss issues. | | |
| | 8. | Business Performance Criteria (1). | 2, 3, 4 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they know how to calculate and interpret net profit margins, ROA, ROE. | 6 h |
| | 9. | Business Performance Criteria (2). | 2, 3, 4 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they know how to calculate and interpret productivity and economy performance indicators. | 6 h |
| | 10. | Transport Services Market | 1, 2 | Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they know how to define supply / demand of transport services. They are able to explain specifics of the transport services market. | 4 h |
| | 11. | Consumer and manufacturer behavior. | 1, 2 | Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they know how to explain <i>manufacturers</i> ' <i>behavior</i> , based on the principle of profit maximization. They know how to explain customers behavior based on the principle of benefit maximization. | 4 h |



| | 12. | Market structures (1) | 1, 2 | Listen to the lecture and read the literature. Use multimedia and network. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they can define perfect competition. They can define and explain market failures. They know how to define a monopoly and explain the reasons why it occurs. They are able to distinguish between monopoly and perfect competition. | 4 h | |
|---|-----|---|---------|---|--|------|--|
| | 13. | Market structures (2) | 1, 2 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they can define oligopoly and explain how it occurs. They can define monopolistic competition. They are able to distinguish between perfect and monopolistic competition. | 4 h | |
| | 14. | Economic policy and the market. | 2, 5, 6 | Listen to the lecture and read the literature. Discuss issues. At the seminar student individually or in pairs solve case studies thus presenting the appropriateness of previously acquired knowledge and presenting adopted knowledge and ideas, discuss issues. | In colloquium or written and oral exams they can state and explain the most common measures of transport regulation. | 3 h | |
| | 15. | Concluding Considerations / Repeating and Preparing for Exam. | | Concluding Considerations / Repeating and Preparing for Exam. | | 30 h | |
| 3. EVALUATION OF STUDEN | | | | | | | |
| 3.1. Students` obligations In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquium seminar paper. Students who have during the course achieved: From 0 – 24,9% ECTS credits- is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year; | | | | | | | |



| | • From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular | | | | | | | | |
|-------------------------------------|---|-----------------------------|---------------------------------|-------------------------------|-------------------------------|------------------------------|--|--|--|
| | or extraordinary exam period; | | | | | | | | |
| | • More than 50% ECTS credits - students have the right to access the final exam of the subject. | | | | | | | | |
| | Students can pass th | e final exam in two ways: a | a) during the course throug | h continuous student attend | lance (active participation i | n the lessons, solving case | | | |
| | studies, making and | presenting the seminar pap | per and passing two colloqu | iia); b) during the course (a | ctive participation in the le | ssons, solving case studies, | | | |
| | creating and present | ing the seminar paper) and | passing the exam (written | and oral exam). | | | | | |
| | | | | 2 (by submitting both | | | | | |
| | Attendance | | Written exam | colloquiums the student | Project | | | | |
| | 1 ittellaunee | | Witten exam | is relieved of an written | 110,000 | | | | |
| | | | | examination) | | | | | |
| | Experimental | | Research | | Practical work | | | | |
| 3.2. Monitoring student work | work | | | | Tractical work | | | | |
| (enter the share of ECTS credits | Essay | | Report | | Continuous | | | | |
| for each activity so that the total | 1 55 u y | | nepon | | examination | | | | |
| number of ECTS points | | 2 (by submitting both | | | | | | | |
| corresponds to the credit score | Colloquium | colloquiums the student | Seminar paper | 0,5 | | | | | |
| of the course) | conoquium | is relieved of a written | ~ · · · · · · · · · · · · · · · | | | | | | |
| - | | and oral examination) | | | | | | | |
| | | | | 1 (by submitting both | | | | | |
| | Class activities | 0,5 | Oral exam | colloquiums the student | | | | | |
| | | | | is relieved of an oral | | | | | |
| | | | | examination) | | | | | |
| | | oad on all bases amounts to | 1 ECTS point for 30 hours | | is estimated as: | | | | |
| | Commitn | | | Hours (estimate) | | | | | |
| 3.3. Student workload | 1. Attending | | | | 45 | | | | |
| | _ | and Presenting seminar pap | | 10 | | | | | |
| | 3. Prepara | tion for the Colloquium / e | xam through self-study | 35 | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | |

| | Valuation Element | Poor | Satisfying | Above average | |
|----------------------------|-------------------|---|---|---|--|
| 4.1. Seminar paper grading | Organization | The paper is not organized in a logical | The paper is well structured with a clear | The paper is well-structured with a clear | |
| | Organization | order and its structure is lacking. | distinction between the introduction, | distinction between the introduction, the | |



| | | | | | the main par conclusion. | t of the text a | | main part of the text and the conclusions that are perfectly logically linked to one another | |
|----|---|---|--|--|--|--|---|---|--|
| | | Terminology, writi style | with official terminologis not appropriate, see long, modest vocabula | with official terminology. Writing style of is not appropriate, sentences are too is long, modest vocabulary, and frequent c | | Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors. | | writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors. | |
| | | Quoting a referencing | Sources are not speci references do not mat show a superficial a research topic. | ch the topic and | 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. | |
| | | | Satisfying | | | | Above average | | |
| 4. | 2. Colloquium / exam grading | Give answer by understanding. Does apply the basic term apply or explain the c | Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples. | | | and evaluand thore and logic concepts are not | 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. | | |
| | | Active | 70-75% of attendance | 76-86% of | attendance | 87-100% of attendan | | e Solved case study. | |
| | | participation in the lessons | 2 points | 4 pc | ints | 7 points | | 3 points | |
| | 3. Creating a final grade cording to evaluation | Seminar paper | 2 | 3 | 3 | 4 | | 5 | |
| | ements | Seminar paper | 5 points | 7 рс | ints | 8 po | ints | 10 points | |
| | | Colloquium / | 2 | 3 | 3 | 4 | | 5 | |
| | | written exam | 50-64,9% | 65-79 | 9,9% | 80-89 | ,9% | 90-100% | |



| | | 25 points | 30 points | 35 points | 40 points | |
|--|--|-----------|----------------|-----------|------------|--|
| | Orel anom | 2 | 3 | 5 | 5 | |
| | Oral exam | 25 points | 30 points | 35 points | 40 points | |
| | Percentage of adopted knowledge, skills and competences (teaching + final exam) | | Numerous grade |] | ECTS grade | |
| 4.4. Creating a final made | | 90-100% | 5 (excellent) | | А | |
| 4.4. Creating a final grade according to absolute allocation | | 80-89,9% | 4 (very good) | | В | |
| according to absolute anocation | 65 - 79,9% | | 3 (good) | | С | |
| | 60 - 64,9% | | 2 (sufficient) | D | | |
| | | 50-59,9% | 2 (sufficient) | | Е | |

5. ADDITIONAL INFORMATION ABOUT THE COURSE

| | Title | Number of copies in the library | Availability via other media |
|--|--|---|--|
| 5.1. Compulsory literature (available in the library and through other media) | Bukljaš Skočibušić M., Radačić Ž., Jurčević M. (2011): "Economics of Traffic", Faculty of transport and traffic sciences, University of Zagreb, Zagreb. (selected chapters) 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) | 4 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 throu attendance and student activity during classes and provided information on students` progress through short coll further guidance to students will be provided in order to increase the efficiency of their work. Students will be in as well as the methods of work and the required literature. Indicators of quality assurance system: Student sur Croatian employment service on the annual state of student employment, surveys from employers and Alumni ass | oquiums and homewor formed about their righvey, monitoring of an | k, information for ts and obligations |



| | | It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any delay in |
|--------------------------------|---|---|
| 5.4. Information on the course | teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the teachers during the | |
| | | consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is possible to ask questions by e- |
| and contact with the teacher | 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 the new course or the course that has been supplemented and / or amended or updated.

| 1. GENERAL COURSE IN | 1. GENERAL COURSE INFORMATION | | | | | | | | | |
|--|---|---|---|--|--|--|--|--|--|--|
| 1.1. Course title | OPERATIONAL RESEARCH IN TRAFFIC | 1.8. Course code in ISVU | 140769 | | | | | | | |
| 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 | Želimir Mikulić, grad. eng., senior lecturer Luca Olivari, mag. math., assistant | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (30 + 15 + 0 + 0) | | | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1.11. Level of e- learning application (1 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 | X yes □ no | | | | | | | |
| 1.7. Credit score (ECTS) | 4 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | | | |

| 2. COURSE DESCRIPTION | |
|---|---|
| 2.1. Course objectives | Getting acquainted with the various types of problems that arise in business decision making. Adopting knowledge and skills of the analytical way of thinking, and the logical way of concluding and interpreting the results in further education. The aim of the course is to familiarize and teach students how to use the methods in order to solve certain problems in business decision making and to use methods for optimizing such problems. |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF. |
| 2.3 Learning outcomes on the | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. |
| study programme level | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. |
| | LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process. |



| | LO8: To solve problems in traffic by using analytical and / or graphical methods. | | | | | | | |
|---------------------------------|---|-------------------|--|--|--|--|--|--|
| | | Level of LO: | | | | | | |
| | | 1- remembering, | | | | | | |
| | | 2- understanding, | | | | | | |
| | Learning outcomes accroding to the Bloom's taxonomy: (up to two verbs per LO) | 3- application, | | | | | | |
| | | 4- analysis, | | | | | | |
| 2.4. Expected learning outcomes | | 5- evaluation, | | | | | | |
| on the course level | | 6- synthesis | | | | | | |
| | 1. to formulate the problem from practice as a suitable mathematical model | 4 | | | | | | |
| | 2. to solve optimization problem with graphical method | 4 | | | | | | |
| | 3. to apply computer tools for solving linear programming problem and to recommend optimal solution | 3, 5 | | | | | | |
| | 4. to choose the appropriate algorithm and to solve network problems | 3, 4 | | | | | | |
| | 5. to apply critical path method in the project management | 3, 4 | | | | | | |

| | | Constructive allignement | | | | | | | |
|--|---|--------------------------|--|--|--|--|----------------|--|--|
| | | 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 | | |
| | 2.5. Course content according to detailed curriculum schedule | 2. | Linear Programming Problems | 1, 3 | Listen to lectures and read literature. Work independently on a computer solve tasks.The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to model the problem of linear programming and to solve the problem of linear programming using the Solver and recommend the optimal solution. | 4 h | | |
| | 3. Linear Programming Problems. Graphical solution | 1, 2 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to model a linear programming problem and sketch a graph and solve an optimization problem. | 3 h | | | | |
| | | 4. | Simplex Method. Sensitivity Analysis, | 1, 2, 3 | Listen to lectures and read literature. | In colloquium or written and oral exams students know how to model the linear | 3 h | | |



| - | rr | | | 1 | 1 |
|-----|--|------------|---|---|------|
| | Postoptimality Analysis, Shadow prices. Modeling Integers | | Work independently on a computer solve tasks. The exercises demonstrate how to solve tasks. Solve exercises. | programming problem and solve the problem with the simplex method. | |
| 5. | The Transportation Problem. | 1, 2, 3 | Listen to lectures and read literature. Work independently on a computer solve tasks. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to define and describe the transport problem, distinguish between open and closed transport problem., and set the model. | 3 h |
| 6. | Northwest corner rule, Minimum prices method, Vogel's approximation method, Russel's approximation method | 1, 2 | Write the colloquium. | In colloquium or written and oral exams students know how to solve the transportation problem using the northwest corner rule, minimum prices method, and Vogel's and Russel's approximation methods. | 3 h |
| 7. | MethodfortheTransportationProblem,The Assignment Problem. | 1, 2, 3 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to solve the transport problem and the assignment problem. | 3 h |
| 8. | Revision for colloquium. Colloquium. Network. | 1, 2, 3, 4 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | - | 20 h |
| 9. | Network and Graph, Network optimization Models. The Shortest-Path Problem, The Minimum Spanning Tree Problem | 4 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to define and describe networks, graphs, and network resolution methods, and use the appropriate algorithm to solve the minimum spanning tree and shortest path problem. | 4 h |
| 10. | The Maximum Flow Problem, The Minimum Cost Flow Problem | 4 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to solve the problem of maximum flow and minimum cost flow using an appropriate algorithm. | 3 h |
| 11. | Project menagement with PERT/CPM. | 4, 5 | Listen to lectures and read literature. The exercises demonstrate how to solve tasks. Solve exercises. | In colloquium or written and oral exams students know how to apply the critical path method in project management. | 4 h |



| | 12. | Dynamic Programming. | 5 | Work independent | s and read literature. ly on a computer solve es demonstrate how to exercises. | In colloquium or written students know how to application of dynamic prog- optimization problems. | describe the | 2 h | |
|---|---|---|------|----------------------|---|---|---------------------------------|------|--|
| | 13. | Stochastic Dynamic Programming. | 5 | Work independent | s and read literature. ly on a computer solve es demonstrate how to exercises. | In colloquium or written students know how to application of stoha programming to solve problems. | to describe the stic dynamic | 2 h | |
| | 14. | ApproachtoProblemAnalysis,TheModelSelectionCriteriaandMethodofSolvingProblems.Revisionforcolloquium.Colloquium. | 4, 5 | Write the colloquin | um. | - | | 20 h | |
| | 15. | Revision | - | Listen to lectures a | and read literature. | - | | 20 h | |
| 3. EVALUATION OF STUDENT | rs` wof | RK | | | | | | | |
| 3.1. Students` obligations | In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list. Students who have during the course achieved: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; 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 | Attenda | ance 0,5 | Wr | itten exam | 2 (without colloquia) | Project | | | |
| (enter the share of ECTS credits for each activity so that the total | Experir work | nental | Res | earch | | Practical work | | | |



| number of ECTS points corresponds to the credit score of | Essay | | Report | | | | Continuous examination | 0,5 | |
|---|------------------------------------|--|------------------------|--------------|---------------------------|--|--|---|--|
| the course)) | Colloquium | 2 (without written exam) | Seminar paper | r | | (| Other | | |
| | Class activity | 0,5 | Oral exam | | 0,5 | (| Other | | |
| 3.3 Student workload | 1. Attending | n all bases for 1 ECTS cred classes and exercises 45 ho colloquia or exams through | urs | | | imated as: | | i | |
| 4. GRADING SYSTEM | | | | | | | | | |
| 4.1. Grading seminar papers | - | | | | | | | | |
| | U | nsatisfactory | | Sa | tisfactory | | | Above average | |
| 4.2. Grading colloquia/ written and oral exam | understanding. Determs and concept | nemory, without a deep bes not know or apply bas s. Does not know how to app contents of the course w | sic bly the mate | y imparts ne | ew knowled ns the terr | ots and without dge, understands ns and concepts | and evaluation accurately and the the material, and the terms and co Finds solutions | t the level of analysis, synthesis n. Observes the principles, horoughly explains the content of d logically connects and explains oncepts supported with examples. that were not originally given. ns with related material. | |
| | Active course | 70-74,9% of attendance | 2 75-79 | ,9% of atter | ndance | 80-89,9% of attendance | | 90-100% of attendance | |
| | attendance | 2 points | | 5 points | | 10 po | ints | 20 points | |
| 4.2 Einstein de serve d'au de | | 2 | | 3 | | 4 | | 5 | |
| 4.3. Final grade according to evaluation elements | Colloquia/ Written exam | 50-64,9% | | 65-79,9% | | 80-89 | ,9% | 90-100% | |
| | | 25 points | | 30 points | | 35 points | | 40 points | |
| | Oral exam | 2 | | 3 | | 5 | | 5 | |
| | orur enturn | 25 points | | 30 points | | 35 points | | 40 points | |
| 4.4. Final grade according to absolute division | - | of acquired knowledge, skil ences (teaching + final exar | | Nu | merical gra | ade | E | ECTS grade | |
| | | 90 - 100% | | 5 | 5 (excellent |) | | А | |



| 80 - 89,9% | 4 (very good) | В |
|------------|------------------|---|
| 65 – 79,9% | 3 (good) | С |
| 60 - 64,9% | 2 (satisfactory) | D |
| 50 - 59,9% | 2 (satisfactory) | E |

5. ADDITIONAL COURSE INFORMATION

| 5.1. Compulsory literature | Title | Number of copies in the library | Availability via other media | | |
|--|--|------------------------------------|---------------------------------|--|--|
| (available in the library and via | Pašagić, H., Ivanković, B., Kapetanović, N.: Mathemathics method in Traffic, Faculty of transport and traffic | 3 | | | |
| other media) | sciences, University of Zagreb, 2004. (selected chapters) | | | | |
| | Lukač Z., Neralić L.: Operational research, Element 2013. (selected chapters) | | | | |
| 5.2. Additional literature (at the | Neralić, L.: Introduction to mathematical programming 1, Zagreb, 2012. (selected chapters) | | | | |
| moment of changes and/or | Hillier F., Lieberman G.: Introduction to operations research, McGraw Hill 8th ed. 2005, 8th Ed. (selected | | | | |
| amended of study programme) | chapters) | | | | |
| 5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences | The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students' progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association. | | | | |
| 5.4. Informing about the course and contacting the teacher | It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail). | | | | |



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

| 1. GENERAL INFORMATI | ON | | | | | | |
|--|--|--|---|--|--|--|--|
| 1.1. Course title lecturer | INFRASTRUCTURE OF ROAD TRAFFIC | 1.8. Course code in ISVU | 157013 | | | | |
| 1.2. Course title lecturer | Darijo Šego, univ. spec. traff., 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) | (45 + 15 + 30 + 0) | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | | |
| 1.7. Credit score (ECTS) | 6 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | |
| 2. COURSE DESCRIPTION | l . | | | | | | |
| 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; qualific | ation level 4.2 according to the CROQF. | | | | | |
| 2.3. Learning outcomes on the study programme level | in Croatian and English. | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. | | | | | |
| | LO4: To apply knowledge from the field of natural | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | | | |
| | LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process. | | | | | | |
| | LO8: To solve problems in traffic by using analytic | LO8: To solve problems in traffic by using analytical and/or graphical methods. | | | | | |
| | LO11: To identify, predict and propose solutions in | LO11: To identify, predict and propose solutions in road traffic technology and technique. | | | | | |
| | LO12: To set up a minor traffic process and critically evaluate it. | | | | | | |



| | L013 | : To track trends in the developmen | t of technique | , technology and safety in traffic. | | | |
|---|--|--|------------------|---|------------------------------------|---|----------------|
| | Learning outcomes by Bloom: (maximum 2 werbs for LO) | | | | | | |
| 2.4. Expected learning | | | | | | 1- memory, | |
| outcomes on the course level (4- | | | | | | 2- understanding, | |
| 10 learning outcomes) | | | | | | 3- application, | |
| | | | | | | 4- analysis, | |
| | | | | | | 5- evaluation, | |
| | | | | | | 6- synthesis. | |
| | 1 | . Define terms and categorize road | ds and road in | tersections in the Republic of Croatia. | | 1, 3 | |
| | 2 | | | equired for design and construction. | | 2, 4 | |
| | 3 | . Distinguish and compare the low parking lots and garages. | ver and upper s | structures of the road, road structures, associated | roadside facilities, | 2, 4 | |
| | 4 | . Enumerate and propose necessar | ry road equipr | nent, road maintenance works. | | 1,6 | |
| | 5 | . Distinguish and ranking the city | roads, streets | , and road junctions. | | 4, 5 | |
| | 6 | . Use materials and tools for search | ching scientifi | c and technical literature in the native and English | sh language. | 3 | |
| | 7 | . Present the acquired knowledge, | , ideas, proble | ms, and solutions independently and in a team. | | 6 | |
| | 8 | . Tell, summarize the history of ro | oad construction | on in the world and the Republic of Croatia. | | 1, 2 5 | |
| | 9 | . Select and evaluate the location | for street park | ing spaces, parking lot, and parking garage. | | | |
| 2.5. Course content according to detailed curriculum schedule | Cons | tructive allignement | | | | | |
| | No | Thematic unit | LO of the course | Content/teaching methods | Evalı | ation | 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. | | - | 3 h |
| | 2. | Development of road construction (the historical development of roads in the | 6, 7, 8 | They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the | oral exam, stuc summarize and c | m or written and lents know tell, comment on road oughout history, | 6 h |



| | World and the Republic of Croatia). | | 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. | 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). | |
|----|---|---------|---|---|-----|
| 3. | Road classification (classification based on the law of roads, the classification standards, types of roads in the Republic of Croatia) | 1, 6, 7 | They listen to a lecture and read literature. They use multimedia and network. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. During exercises, the topic is project assignment. | At the colloquium or the written and oral exam, students can define the concept of the road on the basis of the Roads Law of the Republic of Croatia, categorize roads, establish the difference between individual categories of roads, identify the most important roads in the Republic of Croatia. Exercise created, seminar paper created and presented (by computer programs). | 6 h |
| 4. | Road design I (project documentation, road indicators, tracing, layout elements) | 2, 6, 7 | They listen to a lecture and read literature. At the seminar class, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. During exercises, the topic is routing of the road. | At the colloquium or the written and oral exam, students can state and differentiate the study project documentation, sort the order of the road design, determine the difference between the individual terrain paths that the road passes through, distinguish and explain and calculate speeds, and analyze the layout elements of the road. Exercise created, seminar paper created and presented (by computer programs). | 7 h |



| - | | | | | | |
|---|----|------------------------------------|---------|---|--|------|
| ſ | 5. | Road design II (elements of | | They use multimedia and network. They use | At the colloquium or the written and | |
| | | longitudinal sections, road cross- | | multimedia and network. They listen to a | oral exam, students know how to | |
| | | sections, drainage elements) | | lecture and read literature. At the seminar | distinguish between the terrain and | |
| | | | | class, they individually explore the content of | the level of the road, analyze and | |
| | | | | this topic area by searching the database, and | describe the road elements, | |
| | | | 2, 6, 7 | on the basis of it and reading the literature, | enumerate and extract hydro- | 7 h |
| | | | | create a seminar paper that presents the | meteorological data and drainage | |
| | | | | acquired knowledge and presents their own | elements. Exercise created, seminar | |
| | | | | ideas, and ways to solve problems. During | paper created and presented (by | |
| | | | | exercises, the topic is the calculation of | computer programs). | |
| | | | | elements of the horizontal and vertical bend. | | |
| | 6. | Road design – guest lecture | | They listen a guest lecture about topic. At the | At the colloquium or the written and | |
| | | | | seminar class, they individually explore the | oral exam, students define the basic | |
| | | | | content of this topic area by searching the | terms and concepts of road and road | |
| | | | | database, and on the basis of it and reading | intersection. Specify and distinguish | |
| | | | 2, 6, 7 | the literature, create a seminar paper that | the study design documentation, sort | 7 h |
| | | | 2, 0, 7 | presents the acquired knowledge and presents | the order of road design. Analyze | / 11 |
| | | | | their own ideas, and ways to solve problems. | and describe the elements of the | |
| | | | | | road. Exercise created, seminar | |
| | | | | | paper created and presented (by | |
| | | | | | computer programs). | |
| | 7. | Road structure (lower and upper | | They use multimedia and network. They | At the colloquium or the written and | 7 h |
| | | part of road structure) | | listen to a lecture and read literature. At the | oral exam, students can define the | |
| | | | | seminar class, they individually explore the | concept of the lower and upper road | |
| | | | | content of this topic area by searching the | structure, list and describe the parts | |
| | | | | database, and on the basis of it and reading | of the lower and upper road | |
| | | | 3, 6, 7 | the literature, create a seminar paper that | structure, distinguish road | |
| | | | | presents the acquired knowledge and presents | structures, draw the shapes of the | |
| | | | | their own ideas, and ways to solve problems. | hull, establish the difference in the | |
| | | | | During exercises, the topic is Creating a | mode of ventilation in tunnels, | |
| | | | | horizontal bend. | identify factors for the choice of | |
| L | | | | | road curtain Exercise created, | |
| | | | | | | |



| | | | | seminar paper created and presented | |
|-----|---------------------------------|------------|--|--|-----|
| | | | | (by computer programs). | |
| 8. | Road equipment (traffic signs | | They listen to a lecture and read literature. At | At the colloquium or written and | 7 h |
| | and signaling) | | the seminar class, they individually explore | oral exam, students can sort the road | |
| | | | the content of this topic area by searching the | equipment, distinguish between | |
| | | | database, and on the basis of it and reading | road equipment and traffic | |
| | | 1, 4, 6, 7 | the literature, create a seminar paper that | equipment, describe road signs, | |
| | | | presents the acquired knowledge and presents | vertical, horizontal and light traffic | |
| | | | their own ideas, and ways to solve problems. | signs. Exercise created, seminar | |
| | | | During exercises, the topic is Creating | paper created and presented (by | |
| | | | vertical bends. | computer programs). | |
| 9. | Road equipment (traffic signs | | They listen a guest lecture about topic. At the | At the colloquium or the written and | 7 h |
| | and signaling) – guest lecture | | seminar class, they individually explore the | oral exam, students know how to | |
| | | | content of this topic area by searching the | sort traffic signs and signaling. | |
| | | | database, and on the basis of it and reading | Make a difference between marking | |
| | | 1, 4, 6, 7 | the literature, create a seminar paper that | road signs, describe road signs, | |
| | | | presents the acquired knowledge and presents | vertical, horizontal and light traffic | |
| | | | their own ideas, and ways to solve problems. | signs. Exercise created, seminar | |
| | | | | paper created and presented (by | |
| | | | | computer programs). | |
| 10. | Maintenance of the road (the | | They listen to a lecture and read literature. At | At the colloquium or written and | 7 h |
| | main goals of maintenance, | | the seminar class, they individually explore | oral exam, students can state the | |
| | regular and periodic | | the content of this topic area by searching the | basic goals of road maintenance and | |
| | maintenance, machinery for road | | database, and on the basis of it and reading | protection, identify the types of road | |
| | maintenance) | | the literature, create a seminar paper that | maintenance, distinguish between | |
| | | 3, 4, 6, 7 | presents the acquired knowledge and presents | regular and winter road | |
| | | 5, 1, 0, 7 | their own ideas, and ways to solve problems. | maintenance, enumerate and | |
| | | | During exercises, the topic is making of | describe road maintenance works, | |
| | | | notches, cuts, and embankments. | categorize road maintenance | |
| | | | | machinery. Exercise created, | |
| | | | | seminar paper created and presented | |
| | | | | (by computer programs). | |
| | | | | | |



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



| | | | | | | seminar paper created and (by computer programs). | l presented | | | |
|---|--|---|--------------|---|--|--|--|---------|--|--|
| | 14. Service facilitie (bus stops, terminals, rest stations) | stations, and | 3, 6, 7 | They listen to a lecture and the seminar class, they inc the content of this topic are database, and on the basis the literature, create a se presents the acquired know their own ideas, and ways t During exercises, the t intersection elements and th | dividually explore a by searching the of it and reading eminar paper that ledge and presents to solve problems. copic is Control | At the colloquium or in t and oral exam, stud enumerate and desc accompanying roadside facilities. To distinguish standpoint and guesswork the location of the bus Exercise created, semin created and presented (by programs). | lents can ribe the e service n between c. Evaluate s stations. nar paper | 6 h | | |
| | 15. Final considera and preparing fo | | - | They listen to a course leaded individuals for the exam. | cture and prepare | - | | 90 h | | |
| 3. EVALUATION OF STUD | ENT WORK | | | | | | | | | |
| | have achieved during the academic year; from 25 regular or extraordinary | In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar papers. Students who have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing the area (urritten end or least of the area). | | | | | | | | |
| 3.2. Student work monitoring (enter the share of ECTS credits | Attending classes | 1,5 | | Written exam | 1 (without colloqiums) | Project | | | | |
| for each activity so that the total | Experimental work | | | Research | | Practical work | 0, | 5 | | |
| number of ECTS credits corresponds to the course credit | Esaay | | | Report | | Continuous check | | | | |
| value) | Colloquiums | 1 (without write exam | - | Seminar paper | 1 | (other) | | | | |
| | Teaching activities | 1 | | The oral part of exam | 1 | (other) | | | | |
| 3.3. Student work-load | | | | semester hours and is assesse | | | | | | |
| | presentation (30 hours), | , attending exercis | es and makin | g the final exercise (15 hours) |), preparation for th | e midterm/exam through se | elf-study (90 | hours). | | |



| 4.1. Evaluation of seminar paper | Elements of evaluation | Bad | Satisfying | | Abov | /e average |
|---|---|--|---|--|---|---|
| | Organization | The paper is not organized in a logical order and lacks structure. | The paper is well structured with between the introduction, the mai and the conclusion. | | distinction between | structured with a clear n the introduction, the text and the conclusion, 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 terminology. The writing style i sentence structure is clear, th appropriate and there are few gran | s appropriate, the ne vocabulary is | Words and express official terminolounderstanding of the style is excellent, the | ssions are aligned with ogy and show an eir meaning. The writing the sentences are clear and lary is rich and there are |
| | 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 inco errors. The references are relevan show a satisfactory research attitu | nt to the topic and | consistently listed appropriate, their | curately, completely and . The references are list is "rich" and shows a detailed research |
| 4.2. Gradeing of the colloquium/written and oral |] | Bad | Satisfying | | | /e average |
| exam It responds by memory, without a deeper understanding. It does not know or apply basic terms and concepts. It does not know how to apply | | | It reproduces the basic conce difficulty imparts new knowledge material, explains the terms and supports with examples. | e, understands the | synthesis, and eva legality, accurately the content of the connects and explai that it supports | the level of analysis, luation. It observes the and thoroughly explains material, and logically ns the terms and concepts with examples. Finds not originally given. It yith related material. |
| 4.3. Forming the final grade according to the evaluation | Active attendance on class | 70-75% attendance | 76-86% attendance | 87-100% | attendance | Mental map created, Case studies resolved |
| elements | | 2 points | 4 points | 7 p | ooints | 3 points |



| | Samia an an an | 2 | 3 | | 4 | 5 |
|--|---|---|-----------------|------------------------------------|---------------------------------|-----------|
| | Seminar paper | 5 points | 7 points | 8 | points | 10 points |
| | | 2 | 3 | | 4 | 5 |
| | Colloquiums/ Written part of exam | 50 - 64,9% | 65 - 79,9% | 80 - | - 89,9% | 90 - 100% |
| | written part of exam | 25 points | 30 points | 35 | points | 40 points |
| | | 2 | 3 | | 5 | 5 |
| | Oral part of exam | 25 points | 30 points | 35 | points | 40 points |
| 4.4. Formation of the final grade based on the absolute | • • | ed knowledge, skills and aching + final exam) | Numerical grade | | EC | TS grade |
| distribution | 90 - | - 100% | 5 (excellent) | | | А |
| | 80 - 89,9% | | 4 (very good) | | В | |
| | 65 - | - 79,9% | 3 (good) | | С | |
| | 60 - | - 64,9% | 2 (sufficient) | | D | |
| | 50 - | - 59,9% | 2 (sufficient) | | Е | |
| 5. ADDITIONAL INFORMAT | ION ABOUT COURSE | | | | 1 | |
| 5.1. Compulsory literature (available in the library and via | | Tit | | Number of copies in the library | Availability via other media | |
| other media) | Šego D., Ljubić Hinić N Šibenik, 2021. | M.: Infrastructure od Road Tr | of Šibenik, | | e-learning | |
| | Legac I.: Roads I, Facu 2001. or in 2006. | lty of Transportation and Tra | agreb | 4 | - | |
| | e | of public Roads - Road II, Fa agreb 2008. (selected chapte | iences, | 2 | - | |
| | | n roads <u>https://zakon.hr/z/24</u> |) | - | Internet website | |
| | | Affairs, Transport and Infrast bads (the proposal), Zagreb 2 | ignalization | - | Internet website | |
| | Brčić D., Šoštarić M .: F of Zagreb, Zagreb 2012 | Parking and Garages, Faculty 2. (selected chapters) | , University | - | Internet website | |



| 5.2. Additional literature (at the moment of changes and/or amended of study programme) | Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of Sibenik for the mentioned course. Traffic Zone https://www.prometna-zona.com/ | e-learning system Internet website Internet website Internet website Internet website Internet website | | | | | | | |
|---|--|---|--|--|--|--|--|--|--|
| 5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and | attendance and student activity during classes and provided information on students` progress through short colloquiums and h further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about | ne control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of tendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for rther guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations | | | | | | | |
| 5.4. Informing about the course | Croatian employment service on the annual state of student employment, surveys from employers and Alumni association. | | | | | | | | |
| and contacting the course lecturer | adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Studuring the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during the consultation period (at least one hour per week). | the responsibility of each student to be regularly informed about the course, the coursework, and classroom activities. All notices of classes or possible urnment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers ng 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 sk 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 | | | | | | | |



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

| 1. GENERAL INFORMATION | | | | |
|--|---|---|--|--|
| 1.1. Course title | RESOURCES AND EXPLOITATION OF RESOURCES OF ROAD TRAFFIC | 1.8. Course code at ISVU | 142536 | |
| 1.2. Course lecturer | phD. Ernest Bazijanac, regural collegue professor | 1.9. Course code at MOZVAG | | |
| 1.3. Assistants and/or associates | phD. Ivan Mavrin, regular collegue professor Ana-Mari Poljičak, grad. eng. traff., senior lecuter Luka Olivari, mag. eng. mech., lecturer | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 15 + 0 + 0) | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of 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 | X yes \Box no | |
| 1.7. Credit point (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20% X More than 20 % □ | |

| 2. COURSE DESCRIPTION | |
|---|---|
| 2.1. Course objectives | The goal is to provide students with theoretical knowledge: Define basic concepts in the field of road vehicle exploitation;, Differentiate the vehicle's performances, parts and assemblies; Learn how to review vehicle reliability changes, select and describe system diagnostics, and choose the optimal maintenance option for the given operating conditions; Apply the learned content of this course in business practice. |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification level 4.2 according to the CROQF |
| 2.3. Learning outcomes on the study programme level | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. |



| | LO8: To solve problems in traffic by using analytical and / or graphical methods. | | | | | | | | |
|---------------------------------|--|---|--|--|--|--|--|--|--|
| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | | |
| 2.4. Expected learning outcomes | Learning outcomes according to Bloom's taxonomy: (maximum 2 werbs for LO) | Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis. | | | | | | | |
| on the course level | 1. demonstrate knowledge and understanding of the content of the course by defining and describing basic concepts in the field of road vehicle exploitation, | 1, 1 | | | | | | | |
| | 2. distinguish between the performance and analyze the vehicle components and assemblies, | 2,4 | | | | | | | |
| | 3. review and analyze the reliability of the vehicle, | 5,4 | | | | | | | |
| | 4. draw and comment on the impact of exploitation on the life of the vehicle, | 4,4 | | | | | | | |
| | 5. to comment on the impact of the road profile and tires on driving safety, | 4 | | | | | | | |
| | 6. present the acquired knowledge, ideas, problems and solutions independently and in a team. | 6 | | | | | | | |

| 2.5. Course content according to detailed curriculum schedule | Cons | 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 | | | | |
| | 1. | 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. | 5 h | | | | |



| 2. | Changing the technical condition of the vehicle. | 2 | They listen to a lecture and read literature. In the exercise classes describe the physical quantities and compare examples of their relationships with each other. | At the colloquium or written and oral examination know enumerate, explain and give examples of changes in the technical condition of the elements of a motor vehicle during the operation. | 8 h |
|----|--|------|---|--|-----|
| 3. | Causes of technical condition change. | 4 | They listen to a lecture and read literature. In the exercise classes are shown and calculated on examples of different sizes of measurement units (ISO systems). | At the colloquium or the written and oral exam they know how to relate the causes and consequences of exploitation to changes in the technical condition of the vehicle as a whole and of elements, assemblies as parts of the vehicle. | 8 h |
| 4. | Wear, friction (dry and liquid). | 1, 4 | They listen to a lecture and read literature. In the exercise classes, tasks in this field are solved with analytical methods. | At the colloquium or the written and oral exam they can define and describe the dry and liquid friction and explain the role of exploitation on the occurrence of wear and cause and effect relationships during the use of motor vehicles. | 8 h |
| 5. | Features of road vehicles. | 1, 4 | They listen to a lecture and read literature. In the exercise classes, they group motor vehicle parts. | At the colloquium or written and oral exam knows define fundamental features of vehicles. They know how to describe and relate individual factors and their importance in the operation of motor vehicles. | 8 h |
| 6. | Impact of exploitation on the life of the vehicle. | 4, 6 | They listen to a lecture and read literature. 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. | 8 h |
| 7. | Stability and safe driving. Colloquium I. | 4 | They listen to a lecture and read literature. | At the colloquium or the written and oral examination, they can recognize the traffic | 8 h |



| | 1 | | | | I |
|-----|--|---------|---|--|-----|
| | | | | conditions and vehicle trajectories and draw conclusions about safe driving during operation based on the factors given. | |
| 8. | Stability in the curve. Driving mechanics. | 1, 6 | They listen to a lecture and read literature. In the exercise classes, they sketch and explain the forces on the vehicle as they move, and solve problems in this thematic area by analytical methods. | At the colloquium or the written and oral exam they know how to define, calculate and explain the effect of force systems on vehicles during movement and their influence on the driving mechanism. | 8 h |
| 9. | Influence of roadway profile and vehicle elements on driving safety. | 2, 4, 5 | They listen to a lecture and read literature. In the exercise classes, tasks in this field are solved with analytical methods. | At the colloquium or the written and oral exam they can define the influencing factors of the elements, parts of the vehicle and to anticipate the effects and consequences of their technical condition on the safe driving of the motor vehicle during operation. | 8 h |
| 10. | Maintenance of road vehicles. | 1, 3, 4 | They listen to a lecture and read literature. In the exercise classes, they sketch and explain the fault intensity curve. | At the colloquium or the written and oral exam they can define and describe the role of vehicle maintenance for a lifetime. They know how to distinguish and compare different types and types of maintenance and choose the optimal option for the given operating conditions. | 8 h |
| 11. | Vehicle assemblies, engine, coupler. | 1, 2, 6 | They listen to a lecture and read literature. In the exercise classes, they sketch and explain the various designs of clutches used on motor vehicles. | At the colloquium or written and oral exam knows define, outline and describe the role and operation of the engine and clutch. They know how to choose and explain the choice of vehicle assembly in the contemporary context of the development of vehicle construction and its assemblies. | 8 h |
| 12. | Transmission, differential and drive shaft. | 1, 2, 6 | They listen to a lecture and read literature. In the exercise classes, they sketch and 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 | 8 h |



| 1 | | | | | | |
|----------------------------|-------|--|---------|--|--|------|
| | 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. | how to choose and explain the choice of vehicle assembly in the contemporary context of the development of vehicle construction and its assemblies. 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 | 8 h |
| | 14. | Brake system. | 1, 2, 6 | They listen to a lecture and read literature. In the exercise classes, they sketch, explain the principle of operation and propose brake types for various types of motor vehicles. | parameters). 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. | 8 h |
| | 15. | Braking system diagnosis. Colloquium II. Concluding considerations. Repeating and preparing for the exam. | 1, 2 | They listen to a lecture and read literature and prepare individually for the exam. | At the colloquium or the written and oral exam they can define and choose the options for diagnosing the correctness of the braking system. They know from the diagnostic parameters that they have obtained that the braking system can be used. | 40 h |
| 3. EVALUATION OF STUDEN | T WO | DRK | | | | |
| 3.1. Students' obligations | Part- | | • | | ion: for all full-time students attendance of at le t and positively colloquy seminar paper. Stude | |

• From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year;



| | • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or | | | | | | | | | | |
|---|---|--|--|---|------------------------|--|--|--|--|--|--|
| | | ary exam period; | | | | | | | | | |
| | • More that | • 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 n 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 part of the exam). | | | | | | | | | |
| | in classes and preparticipation in class | | | | | | | | | | |
| | Attendance | | Written exam | 3,5 (without colloquia) | Project | | | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | Practical work | | | | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | Continuous examination | | | | | | |
| corresponds to the credit score of the course) | Colloquium | 3,5 (without written exam) | Seminar paper | | Other | | | | | | |
| | Class activity | 0,5 | Oral exam | 1 (without colloquia) | Other | | | | | | |
| | Student workload on all bases is 1 ECTS credit 30 semester hours and is estimated as: | | | | | | | | | | |
| 3.3. Student workload | Obligatio | | | Hours (estimated) | | | | | | | |
| 5.5. Student Workload | 1. Active cl | ass attendance | | 60 | | | | | | | |
| | 2. Preparing | g colloquia or exams through | n individual work | 90 | | | | | | | |
| 4. GRADING SYSTEM | | | | | | | | | | | |
| 4.1. Grading of seminar work | - | | | | | | | | | | |
| | | Bad | Sati | isfying | Above a | 0 | | | | | |
| 4.2. Grading of the colloguium / written and oral exam | understanding. De terms and concept | memory, without a deep bes not know or apply bas s. Does not know how to app contents of the course wi | ic ly the material, explains the | 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 | | | | | |



| | | | | | | riginally give elated materia | | tes correlations with |
|--|---|--|--------|---|----------------|----------------------------------|-----|------------------------------|
| | Active | 70-75% of the presence | 76-86% | of the presence | 87-100% of the | presence | Cas | e studies resolved |
| | attendance | 2 points | | 4 points | 7 point | S | | 10 points |
| 4.3. Forming the final grade | Examination / | 2 | | 3 | 4 | | | 5 |
| according to the evaluation | Written | 50-64,9% | 6 | 5-79,9% | 80-89,9 | % | | 90-100% |
| elements | examination | 25 points | 3 | 0 points | 35 poin | ts | | 40 points |
| | Oral part of the | 2 | | 3 | 4 | | | 5 |
| | exam | 25 points | 3 | 0 points | 35 poin | ts | | 40 points |
| 4.4. Formation of final grade based on absolute distribution | Percentage of acquired knowledge, skills and competences (teaching + final exam) 90 - 100% 80 - 89,9% | | | Number rating 5 (excellent) 4 (very good) | | ECTS grade A B | | A |
| based on absolute distribution | <u>65 - 79,9%</u> <u>60 - 64,9%</u> | | | 3 (good) 2 (sufficient) | | C D | | C D |
| | | 50-59,9% | , | sufficient) | | Е | | |
| 5. ADDITIONAL INFORMAT | ION ON THE SUB. | ІЕСТ | | | | | | |
| 5.1. Required literature (available in the library and | Title | | | | | Number of the lib | - | Availability via other media |
| through other media) | Zavada J.: Means of transport, Faculty of transport and traffic sciences, University of Zagreb, Zagreb, 2000. (selected chapters) | | | | | | | |
| 5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program) | Krpan D.: Motor v | roup of authors: The technique of motor vehicles, Public open school, Zagreb, 2006. rpan D.: Motor vehicles, Tehnical book, Zagreb, 1966. illier, V. A. W.: Fundamentals Motor Vehicle Tehnology, Chelenham GL53 ODN, England, 1991. | | | | | | |

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences during the methods and required literature. Quality assurance system indicators: Students survey, monitoring of CES annual data on annual employment status of students, employer survey and Alumni Association.



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



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

| 1. GENERAL INFORMATION | | | | | | | | | |
|--|--|---|--|--|--|--|--|--|--|
| 1.1. Course title | TECHNOLOGY AND ORGANIZATION OF ROAD TRAFFIC | 1.8. Course code at ISVU | 201139 | | | | | | |
| 1.2. Course lecturer | MSc. Martina Ljubić Hinić, 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) | (45 + 30 + 0 + 0) | | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes 🗆 no | | | | | | |
| 1.7. Credit point (ECTS) | 7 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore 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 | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. |
| the study programme level | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. |
| | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. |



| | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | | | | | |
|---|---|---|--|--|--|--|--|--|
| | LO5: To apply basic legal and economic principles in organization with socially responsible management in technical-technological subjects. | | | | | | | |
| | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. | | | | | | | |
| | LO8: To solve problems in traffic by using analytical and/or graphical methods. | | | | | | | |
| | LO9: To assess and organize processes in the area of road traffic and/or traffic logistics. | | | | | | | |
| | LO11: To identify, predict and propose solutions in road traffic technology and technique. | | | | | | | |
| | LO12: To set up a minor traffic process and critically evaluate it. | | | | | | | |
| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | |
| | Learning outcomes according to Bloom's taxonomy: | Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis | | | | | | |
| 2.4. Expected learning outcomes on the course level | 1. to demonstrate knowledge and understanding of course content by defining and describing the basic principles of road transport technology and organization | 1 | | | | | | |
| | 2. to enumerate and explain the elements of road transport technology | 1, 2 | | | | | | |
| | 3. to distinguish and evaluate the technical and technological characteristics of the elements of road transport technology | 3, 6 | | | | | | |
| | 4. to analyze and compare the characteristics of transportation requirements | 4, 2 | | | | | | |
| | 5. to create a transport process, calculate fleet coefficients and indicators and recommend an optimal solution | 5, 3, 6 | | | | | | |
| | 6. to use materials and tools to search scientific and professional literature in their native and English languages | 3 | | | | | | |
| | 7. to present the acquired knowledge, ideas, problems and solutions independently and in a team | 6 | | | | | | |

| | Cons | tructive allignement | | | | |
|---|------|---|------------------|--|------------|----------------|
| 2.5. Course content according to detailed curriculum schedule | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | Time nedeed |
| | 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 |



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



| 1 | | | | | | |
|---|----|---|------------------------|--|---|------|
| | 5. | Road freight vehicles. Exploitation parameters. | 1, 2, 3, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and specify the types and types of cargo handling equipment and their technical and technological characteristics, which are important for establishing the optimal transportation process. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process. | 5 h |
| | 6. | Temporal analysis of the movement of vehicles. Analysis of the movement of vehicles from the standpoint of the distance traveled and the rated load capacity of the vehicles. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define the coefficients of the time analysis of the fleet, define the coefficients and indicators of the analysis of the distance traveled and the nominal bearing capacity of the fleet, solve the problem of the traffic process and suggest ways to improve the process. The terms of reference are drafted in groups, with discussion and suggestion of measures to optimize the given transportation process. | 5 h |
| | 7. | Maintenance of means of transport. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define the maintenance of means of transport, enumerate and describe the types of maintenance and their influence on the process of transport. The terms of reference are drafted in groups, with discussion and suggestion of measures to optimize the given transportation process. | 5 h |
| | 8. | Transportation process. 1st Colloquium | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and prepare individually for the colloquium. | In colloquium or written and oral exams they can describe and compare the stages of the transport process in the classical and in modern transport processes. | 26 h |



| 2 | | | | | | |
|---|-----|---|------------------------|--|--|------|
| | 9. | Study trip (Faculty of Traffic Sciences in Zagreb, ORYX Safe Driving Center, Croatian Vehicle Center, ZET (bus and tram maintenance and Traffic Control and Management Center), and DOK-ING (production and maintenance of remote control machines, production and maintenance of electric vehicles) | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture. | In colloquium or written and oral exams they define, analyze and evaluate the technical and technological characteristics of the elements of road transport technology and their interdependence in planning the transport process. | 13 h |
| | 10. | Driver's working hours. | 1, 3, 4, 6, 7 | They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to 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, 7 | They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network. | In colloquium or written and oral exams they define and describe the road transport infrastructure and its role in the process of transport. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process. | 5 h |
| | 12. | Garage - service facilities. Road traffic information system. | 1, 2, 3, 5, 6, 7 | They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a | 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 | 5 h |



| | | | | case study. They use multimedia and network. | and role of the information system in modern transportation technologies. The terms of reference are drafted in groups, with discussion and proposal of measures to optimize the given transportation process. | | | |
|--|-----|--|------------------------|--|--|------|--|--|
| | 13. | Road traffic information system. Logistic concept. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In group exercises, they explore the content of this topic area by searching the database, and based on it and the literature they read, come up with their own ideas and ways to solve a case study. They use multimedia and network. | In colloquium or written and oral exams they define and describe the basic features and role of the information system in modern transport technologies, and describe, state and explain the role of logistics and logistic concept with the aim of establishing an optimal modern transportation process. The terms of reference are drawn up in groups, with discussion and suggestion of measures measures to optimize the given transportation process. | 5 h | | |
| | 14. | Logistic concept. 2nd Colloquium. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and prepare individually for the colloquium. | In colloquium or written and oral exams they describe, state and explain the role of logistics and logistics concept with the aim of establishing an optimal modern transportation process. | 26 h | | |
| | 15. | Concluding considerations. Repeating and preparing for the exam. | 6, 7 | They listen to a lecture and prepare individually for the exam. | - | 30 h | | |
| 3. EVALUATION OF STUDENT WORK | | | | | | | | |
| 3.1. Students` obligations In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: • From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; | | | | | | | | |



| | • From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; | | | | | | | | | |
|---|---|---|---------------|----------------------------|---------------------------|-----------------------------|--|--|--|--|
| | • More than 50% - students have the right to take the final exam. | | | | | | | | | |
| | Writing a seminar paper is a prerequisite for obtaining a signature. Students can take the final exam in the course in two ways: a) during the course of | | | | | | | | | |
| | teaching through continuous monitoring of students (active participation in classes and two exams); b) during class (active participation in class and passing exams (written and oral part of the exam). | | | | | | | | | |
| | Attendance | 1 | Written exam | 1 (without colloquia) | Project | 1 | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | Practical work | | | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | Continuous examination | | | | | |
| corresponds to the credit score of the course) | Colloquium | 1 (without written exam) | Seminar paper | | Other | | | | | |
| | Class activity | 1 | Oral exam | 1 | Other | | | | | |
| 3.3. Student workload | | on all bases is 1 ECTS cre mid-term / midterm exam | | s estimated as: Attendance | e 45 h, Design of seminar | work and presentation 30 h, | | | | |
| 4. GRADING SYSTEM | | | | | | | | | | |

4. GRADING SYSTEM

| | Element of evaluation | Bad | Satisfying | Above average |
|------------------------------|---|--|---|---|
| 4.1. Grading of seminar work | Organization Terminology, writing style | The paper is not organized in a logical order and lacks structure. 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. | The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion. 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. | 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. 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 are appropriate, their list is "rich" and |



| | | a cursory approach to topic. | exploring | g the relevant to the satisfactory res | - | | mprehensive and shows a detailed search approach. | | |
|--|--------------------------------------|--|-------------------------|---|----------------|---|--|--|--|
| | | | | | | | | | |
| | | Bad | | Satisfying | | | Above average | | |
| 4.2. Grading of the colloguium / written and oral exam | understanding. I terms and concep | memory, without a deeper Does not know or apply basic ots. Does not know how to apply contents of the course with | difficulty the mater | uces the basic conce imparts new knowled ial, explains the terms is with examples. | dge, understan | and eva accurately ds the materi at the terms examples. | Enowledge is at the level of analysis, synthesi and evaluation. It observes the legality occurately and thoroughly explains the content of the material, and logically connects and explain the terms and concepts that it supports with xamples. Finds solutions that were not riginally given. It notes correlations with related material. | | |
| | Active | | | % of the presence | 87-100% o | f the presence | Case studies resolved | | |
| | attendance | 0 points | | 0 points | 01 | oints | 0 points | | |
| | S | 2 | 3 4 | | 4 | 5 | | | |
| 4.3. Forming the final grade | Seminar paper | Made and handed over | Made | and handed over | Made and | handed over | Made and handed over | | |
| according to the evaluation elements | Examination / | 2 | 3 | | | 4 | 5 | | |
| cientents | Written | 50-64% | | 65-80% | | -90% | 91-100% | | |
| | examination | 25-32 points | | 33-40 points | 41-4 | 5 points | 46-50 points | | |
| | Oral part of the | 2 | | 3 | | 5 | 5 | | |
| | exam | 25-32 points | | 33-40 points | 41-4 | 5 points | 46-50 points | | |
| 4.4. Formation of final grade | Percentage of ac | quired knowledge, skills and com (teaching + final exam) | petences | Number ratir | - | | ECTS grade | | |
| based on absolute distribution | | 90 - 100% | | 5 (excellent | , | | A | | |
| | | 80-89,9% | | 4 (very good | l) | | B | | |
| | | 65 – 79,9% | | 3 (good) | | С | | | |



| | 60-64,9% | 2 (sufficient) | | D | |
|---|--|--|---------------------------------|--|--|
| | 50 - 59,9% | 2 (sufficient) | | E | |
| 5. ADDITIONAL INFORMATI | ON ON THE SUBJECT | | | | |
| 5.1. Required literature | Title | | N | umber of copies in the library | Availability via other media |
| (available in the library and through other media) | Županović, I.: Technology of road transport, Faculty of trans Zagreb, Zagreb, 2002. (selected chapters) | sport and traffic sciences, Univer | rsity of | 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 Maritir 2001. Ortuzar, J. de D., Willumsen, L.G. : Modelling Transport, John Course lectures | | 3 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 necessar attendance and activity in the classroom and information obta further guidance to students in order to increase their work effi- and required literature. Quality assurance system indicators: employer survey and Alumni Association. | ained about student progress thro ciency. Students will be instructed | ough the mid d in their righ | lterm will provide the the the the the the term obligations as | e information needed for well as working methods |
| 5.4. Informing about the course and contacting the teacher | It is the responsibility of each student to be regularly informed possible adjournment will be published in a timely manner on teachers during the consultation period (at least one hour per w possible to ask questions by e-mail (from the official e-mail a days after receiving the e-mail). | the e-learning site of the course a veek), while for short questions an | and on the we | ebsite of the Polytech ns they can be contac | nic. Students can contact ted during class. It is also |



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

| 1. GENERAL INFORMATION | . GENERAL INFORMATION | | | | | | | |
|--|---|---|--|--|--|--|--|--|
| 1.1. Course title | TRAFFIC TECHNIQUES | 1.8. Course code at ISVU | 142539 | | | | | |
| 1.2. Course lecturer | MSc. Martina Ljubić Hinić, 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) | (45 + 15 + 0 + 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes \Box no | | | | | |
| 1.7. Credit point (ECTS) | 6 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore 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 |
| | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. |
| 2.3. Learning outcomes on the | LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. |
| study program level | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. |
| | LO4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. |
| | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. |



| | LO7: To apply computer tools for analysis and comparison of data, and suggest an optimal solution in traffic process. | | | | | | | | |
|---|---|---|--|--|--|--|--|--|--|
| | LO10: To compare and choose technical and technological solutions in traffic and/or goods flows. | | | | | | | | |
| | LO11: To identify, predict and propose solutions in road traffic technology and technique. | | | | | | | | |
| | LO12: To set up a minor traffic process and critically evaluate it. | | | | | | | | |
| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | | |
| | Learning outcomes according to Bloom's taxonomy: | Level of LO: 1- remembering, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis | | | | | | | |
| 2.4. Expected learning outcomes on the course level | 1. to demonstrate knowledge and understanding of course content by defining and describing the basic principles of traffic flow | 1, 1 | | | | | | | |
| | 2. to enumerate and explain the factors of road safety, their role and significance in traffic flow | 1, 2 | | | | | | | |
| | 3. to analyze and compare traffic supply and demand relationships and recommend problem solving methods | | | | | | | | |
| | 4. to analyze the example of traffic conflict and propose measures to increase traffic safety | | | | | | | | |
| | 5. to comment on and critically evaluate the causes of conflicts in traffic flows | 4, 5 | | | | | | | |
| | 6. to use materials and tools to search scientific and professional literature in their native and English languages | 3 | | | | | | | |
| | 7. to present the acquired knowledge, ideas, problems and solutions independently and in a team | 6 | | | | | | | |

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



| | Traffic safety factors. | 1, 2, 7 | Listen to lectures and read literature. | In colloquium or the written and oral exam they define the factors of traffic safety. They describe the role and importance of factors for the safe and undisturbed flow of traffic flows. | 3 h |
|----|--|---------------------|---|--|-----|
| 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, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they enumerate and describe the characteristics, characteristics and behaviors of a person which are necessary for the safe operation of the vehicle. In colloquium or written and oral exams they can state and describe the active and passive elements of vehicle safety. | 4 h |
| 4. | Vehicle as a factor in traffic safety. | 1, 2, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system | 4 h |
| 5. | Vehicle as a factor in traffic safety. | 1, 2, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system, as well as define what is the road and describe the elements of road safety, and analyze and | 4 h |



| 1 | | | | | | |
|---|-----|--|------------------------|---|---|------|
| | | | | | 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, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they can enumerate, define and describe the role of technical and technological characteristics of vehicles in the traffic system, define what is the road and describe the elements of road safety, and analyze and conclude how the proper maintenance of the road affects the traffic system. | 4 h |
| | 7. | Road traffic and Incident factor. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and describe conflict situations in road traffic, and analyze the impact of improper traffic management on the safety of all participants. They know how to list incident factors and explain their impact on traffic. | 4 h |
| | 8. | Road design elements. 1st Colloquium | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and prepare individually for the colloquium. | In colloquium or written and oral exams they define and describe the elements of road design and their role in guiding the flow. | 34 h |
| | 9. | Traffic counting and planning (fieldwork). | 1, 3, 4, 5, 6, 7 | AT the fieldwork in group work, they investigate and solve a case study. | In colloquium or written and oral exams they define and describe traffic counting methods and their role in traffic flow planning. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic flows. | 9 h |
| | 10. | Parking lots and garages. Road and tunnel lighting. | 1, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the | In colloquium or written and oral exams they 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 |



| 1 | | | | | | |
|----|-----|--|------------------------|---|---|-----|
| | | | | read 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. | |
| 1 | 11. | Adherence coefficient. Vehicle stability. Horizontal and vertical transparency. | 1, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and describe the characteristics of vehicles and roads that influence the best adhesion of the vehicle to the ground in order to maximize the stability of the vehicle when moving, and define and explain what factors reduce and increase visibility for road users. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic flows. | 4 h |
| 12 | 12. | Safety clearance between vehicles in motion. Braking path. The way to react. | 1, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the read literature, come up with their own ideas, and ways to solve problems. | In colloquium or written and oral exams they define and describe the elements of the safety gap between different modes of traffic on the roads, and define and describe the basic concepts and elements necessary to determine the length of the braking and response times and propose measures for improvement. Seminar work is organized in groups, discussing and proposing measures to calm traffic, resolve conflict situations and improve traffic | 4 h |
| 13 | 13. | Traffic signalization. | 1, 2, 3, 4, 5, 6, 7 | They listen to a lecture and read literature. In the course of the seminar, they individually explore the content of this topic area by searching the database, and on the basis of it and the | 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 |



| | | | | | | me up with their own | | to calm traffic, resolve | |
|---|----------------------------|---|---|--|--|---|---|---|--------------------------------------|
| | | | | | ideas, and ways t | o solve problems. | | d improve traffic flows. | |
| | 14. | Traffic lightin management. Pedes 2nd Colloquium. | 0 | 1, 2, 3, 4, 5, 6, 7, 8, 9 | They listen to a individually for t | lecture and prepare he colloquium. | describe and specify | ten and oral exams they ways to control the light types and cycles of light ans and vehicles. | 34 h |
| | 15. | Concluding conside Repeating and prep exam. | | 6,7 | They listen to a individually for t | lecture and prepare he exam. | - | | 34 h |
| 3. EVALUATION OF STUDEN | T WO | RK | | | | | | | |
| 3.1. Students` obligations | have a Writir teachi | achieved during the c From 0 - 24.9% From 25-49.9% extraordinary exa More than 50% ng a seminar paper is | ourse: of ECTS credi - are assessed m period; - students have s a prerequisite ous monitoring | ts - they are ra by FX (insuffi the right to ta for obtaining of students (a | ited F (unsuccessfu cient) and must pa ike the final exam. | l) and cannot earn EC as and pass the written ents can take the final | TS credits and must re- exam (test). Written ex exam in the course in | equy seminar paper. Stud enroll in the next acaden xam (test) can be held in two ways: a) during the (active participation in | nic year; regular or course of |
| | Atten | <u> </u> | 1 | | n exam | 1 (without colloquia) | Project | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Exper work | imental | | Resear | ch | | Practical work | | |
| for each activity so that the total number of ECTS points | Essay | | | Report | : | | Continuous examination | | |
| corresponds to the credit score of the course) | Collo | quium 1 (wi exam | thout written | Semin | ar paper | 1 | Other | | |
| | Class | activity 1 | | Oral ex | kam | 1 | Other | | |
| 3.3. Student workload | | nt workload on all b ration for the mid-ter | | | nester hours and is | estimated as: Attenda | nce 45 h, Design of se | eminar work and present | ation 15, |



| 4. GRADING SYSTEM | | | | | | | | |
|--|--|---|---|--|---|---|--|--|
| | Element of evaluation | on Bad | Bad S | | Satisfying | | Above average | |
| 4.1. Grading of seminar work | Organization | | The paper is not organized in a logical order and lacks structure. | | The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion. | | distinction between the introduction, the main body of the text and the conclusion, which are logically interconnected. Words and expressions are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences | |
| | Terminology, writ style | ing official terminology. T is not appropriate, the s long, of a modest voca | long, of a modest vocabulary and with frequent and repeated grammatical | | Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors. | | | |
| | Citing and referencing references The sources are not listed references do not fit the topi a cursory approach to exp topic. | | topic and show and with errors. The references are | | how a con | e sources are accurately, completely d consistently listed. The references e appropriate, their list is "rich" and mprehensive and shows a detailed earch approach. | | |
| | Bad | | | Satisfying | | | Above average | |
| 4.2. Grading of the colloguium / written and oral exam | understanding. Does terms and concepts. I | 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 withou difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples. | | of the material, and logically connects and | | |
| 4.3. Forming the final grade according to the evaluation | Active | 70-75% of the presence | -75% of the presence 76-86% of the | | he presence 87-100% of th | | Case studies resolved | |
| elements | attendance | 0 points | 0 points 0 poi | | oints 0 point | | 0 points | |



| | a | 2 | 3 | 4 | | 5 | |
|--|---|---|------------------------|-------------------|---------------------------------|------------------------------|--|
| | Seminar paper | Made and handed over | Made and handed over | Made and han | ded over Mad | de and handed over | |
| | Examination / | 2 | 3 | 4 | | 5 | |
| | Written | 50-64% | 65-80% | 81-909 | 6 | 91-100% | |
| | examination | 25-32 points | 33-40 points 41-45 poi | | ints | 46-50 points | |
| | Oral part of the | 2 | 3 | 5 | | 5 | |
| | exam | 25-32 points | 33-40 points | 41-45 po | ints | 46-50 points | |
| | Ŭ | of acquired knowledge, skills and ences (teaching + final exam) | Number rating | | ECTS grade | | |
| 4.4 Formation of final grade | | 90 - 100% | 5 (excellent) | | А | | |
| 4.4. Formation of final grade based on absolute distribution | | 80 - 89,9% | 4 (very good) | | В | | |
| based on absolute distribution | | 65 - 79,9% | 3 (good) | | С | | |
| | | 60 - 64,9% | 2 (sufficient) | | D | | |
| | | 50 - 59,9% | 2 (sufficient) | | E | | |
| 5. ADDITIONAL INFORMAT | ION ON THE SUB. | IECT | | | | | |
| | | Titl | e | | Number of copies in the library | Availability via other media | |
| 5.1. Required literature (available in the library and through other media) | | fic technique and safety, Faculty 01. (selected chapters) | 2 | Yes | | | |
| unough outer media) | | bout road traffic safety Republic of | | Available on-line | | | |
| 5.2. Supplementary literature (at the time of the submission of changes and / or additions to the study program) | Šibenik, 2021. (sel McShane, W.R. Ro | inić M.: Infrastructure od Road T ected chapters) bess, R.P., Prassas, E.S.: Traffic er urnal of Croatian scientific society | 0 1 | Yes Yes Yes | | | |



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



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

| 1. GENERAL INFORMATI | ON | | | | | | |
|--|---|---|---|--|--|--|--|
| 1.1. Course title | INFORMATION SYSTEMS IN ROAD TRAFFIC | 1.8. Course code in ISVU | 142540 | | | | |
| 1.2. Course lecturer | MSc. Danijel Mileta, seinor 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 + 15 + 0 + 0) | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | |
| 2. COURSE DESCRIPTION | I | | | | | | |
| 2.1. Course objectives | The main objective of the course is to acquaint student function of road traffic, and the benefits they provide. | as with information systems as well as telecommunication a | and information infrastructure in the | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification | Four-year secondary education completed; qualification level 4.2 according to the CROQF. | | | | | |
| 2.3. Learning outcomes on the study programme level | IU1: To apply and link professional terms from technologin Croatian and English. | gy and organization of road traffic in written and oral commu | nication with the professional public | | | | |
| | IU2: To organize and implement team work, and critical | ly judge the opinions and attitudes of team members. | | | | | |
| | IU3: To individually and responsibly search, interpret an | nd integrate the relevant literature needed to make decisions. | | | | | |
| | IU4: To apply knowledge from the field of natural and to | IU4: To apply knowledge from the field of natural and technical sciences to problems in road traffic. | | | | | |
| | IU6: To analyze and present relevant facts from the field | of traffic needed to reach conclusions. | | | | | |
| | IU11: To identify, predict and propose solutions in road | traffic technology and technique. | | | | | |
| | IU13: To track trends in the development of technique, t | echnology and safety in traffic. | | | | | |



| 2.4. Expected learning outcomes on the course level (4- 10 learning outcomes) | Learn 1 2 3 4 | . Critically evaluate and evaluate | Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis. 4 4 5 6 | | | | |
|---|---------------------------|--|---|---|--|--|----------------|
| 2.5. Course content according to detailed curriculum schedule | | tructive allignement | | | | 1 | |
| | No | Thematic unit | LO of the course | Content/teaching methods | Evalı | ation | 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. | they can define, des the basic concep | itten and oral exam acribe and categorize ts of information ransport and set an | 2 h |
| | 3. | ITS | 1, 2, 3, 4 | Students listen to a lecture and read literature. | give an example of | tte, distinguish and intelligent transport erm, written and oral | 3 h |
| | 4. | Internet and intranet | 2, 4 | Students listen to a lecture and read literature. | exam they can de | n, written and oral efine, describe and ms 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 |
| 4. EVALUATION OF STU | UDEN | T 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 | | | | | | | |
|--|---|---|------------------------|--------------------------|-----------------------------|----------------------------|--|--|
| | | the course: from 0 - 24,9% ECTS | | - | | | | |
| | - | 25 - 49,9% - are assessed by FX (in | | | | | | |
| | • | 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 | | | | | | |
| | • | ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two exams); b) passing | | | | | | |
| | | l oral part of the exam). | C | | | | | |
| 3.2. Student work monitoring | Attending classes | 1 | Written exam | 1 (without | Project | | | |
| (enter the share of ECTS credits | | | | colloqiums) | | | | |
| for each activity so that the total | Experimental work | | Research | | Practical work | | | |
| number of ECTS credits corresponds to the course credit | Esaay | | Report | | Continuous check | r) | | |
| value) | Colloquiums | 1 (without written part of exam) | Seminar paper | 0,5 | (other) | | | |
| | Teaching activities | | The oral part of | 0,5 | (other) | | | |
| | | | exam | | | | | |
| 3.3. Student work-load | | all bases is 1 ECTS credit for 30 sem | | sed as attendance (60 | hours), preparation of semi | nar work and presentation | | |
| | (16 hours), preparatio | on for the midterm/exam through sel | f-study (44 hours). | | | | | |
| 4. GRADING SYSTEM | | | - | | | | | |
| 4.1. Evaluation of seminar paper | Elements of evaluation | Bad | Sa | tisfying | Abo | ve average | | |
| | Organization | The paper is not organized in a | The paper is well | structured with a c | lear The paper is well | structured with a clear | | |
| | Organization | logical order and lacks structure. | | the introduction, the r | | n the introduction, the | | |
| | | logical order and hens subclure. | body of the text and t | , | | text and the conclusion, | | |
| | | | 5 | | which are logically | | | |
| | Terminolog, writing | Words and expressions are not in | Words and expressio | ns are in line with off | icial Words and expres | ssions are aligned with | | |
| | style | line with official terminology. | terminology. The wr | riting style is appropr | iate, official terminol | ogy and show an | | |
| | | The writing style is not | | e is clear, the vocabula | | eir meaning. The writing | | |
| | | appropriate, the sentences are | | ere are few gramma | • | ne sentences are clear and | | |
| | | too long, of a modest vocabulary | errors. | | | lary is rich and there are | | |
| | | and with frequent and repeated | | | no grammatical erro | ors. | | |
| | | grammatical errors. | | | | | | |



| | | | | 1. 1.1 | 701 | . 1 . 1 . 1 | |
|--------------------------------------|--|------------------------------------|--|----------------|--|---|--|
| | Citing and | The sources are not listed at all. | The sources are listed but ind | - | | curately, completely and | |
| | referencing | The references do not fit the | errors. The references are relevant to the topic | | consistently listed | | |
| | references | topic and show a cursory | and show a satisfactory resea | arch attitude. | 11 1 | list is "rich" and | |
| | | approach to exploring the topic. | | | comprehensive and | shows a detailed research | |
| | | | | | approach. | | |
| 4.2. Gradeing of the | | Bad | Satisfying | | Abo | ve average | |
| colloquium/written and oral | | | | | | | |
| exam | - · | y, without a deeper understanding. | It reproduces the basic con- | - | U | the level of analysis, | |
| | | apply basic terms and concepts. It | difficulty imparts new knowl | 0 | | aluation. It observes the | |
| | | o apply or explain the contents of | the material, explains the te | - | U I I | and thoroughly explains | |
| | the course with example | ples. | that it supports with example | es. | | e material, and logically | |
| | | | | | connects and explains the terms and concepts | | |
| | | | | | that it supports | with examples. Finds | |
| | | | | | solutions that were | e not originally given. It | |
| | | | | | notes correlations v | notes correlations with related material. | |
| 4.3. Forming the final grade | Active attendance | 0-69,9% attendance | 70-79,9% attendance | 80-89,9% | attendance | 90-100% attendance | |
| according to the evaluation elements | on class | 0 points | 5 points | 7 p | oints | 10 points | |
| | Seminar paper | 2 | 3 | 4 | | 5 | |
| | Seminar paper | 15 points | 20 points | 25] | points | 30 points | |
| | Colloquiums/ | 2 | 3 | 4 | | 5 | |
| | Written part of | 50 - 64,9% | 65 - 79,9% | 80 - | 89,9% | 90 - 100% | |
| | exam | 15 points | 20 points | 25] | points | 30 points | |
| | Oral part of exam | 2 | 3 | | 4 | 5 | |
| | Oral part of exam | 15 points | 20 points | 25] | points | 30 points | |
| 4.4. Formation of the final grade | Percentage of acquired knowledge, skills and | | Numerical gra | ade | EC | TS grade | |
| based on the absolute | competencie | es (teaching + final exam) | | | | | |
| distribution | | 90 - 100% | 5 (excellent | .) | | А | |
| | | 80 - 89,9% | 4 (very good | 1) | | В | |
| | | 65 - 79,9% | 3 (good) | | | С | |



| | 60 - 64,9% | 2 (sufficient) | | D | |
|------------------------------------|--|--|----------------------------------|-------------------------------|--|
| | 50-59,9% | 2 (sufficient) | | E | |
| 5. ADDITIONAL INFORMATI | ON ABOUT COURSE | | | | |
| 5.1. Compulsory literature | Title | Number of copies in the | Availability via other | | |
| (available in the library and via | | | library | media | |
| other media) | Bošnjak I.: Intelligent transport systems (selected chapter | rs) | 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 | The control of students' work quality and the acquisition | of necessary knowledge and skills will be | e ensured through interactive v | work. By keeping track of | |
| that ensure the acquisition of | attendance and student activity during classes and provid | ed information on students` progress three | ough short colloquiums and he | omework, information for | |
| knowledge, skills and | further guidance to students will be provided in order to i | ncrease the efficiency of their work. Stud | lents will be informed about the | neir rights and obligations | |
| competences | as well as the methods of work and the required literatu | re. Indicators of quality assurance system | m: Student survey, monitoring | g of annual data from the | |
| | Croatian employment service on the annual state of stude | nt employment, surveys from employers | and Alumni association. | | |
| 5.4. Informing about the course | It is the responsibility of each student to be regularly infor | med about the course, the coursework, ar | nd classroom activities. All not | tices of classes or possible | |
| and contacting the course | adjournment will be published in a timely manner on the | e-learning site of the course and on the w | by the Polytechnic. Stud | dents can contact teachers | |
| lecturer | during the consultation period (at least one hour per week) |), while for short questions and explanation | ons they can be contacted durin | ng class. It is also possible | |
| | to ask questions by e-mail (from the official e-mail addre | ess name@vus.hr), which will be answer | red as soon as possible (no late | er 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 INFORMATI | ON | | | | | |
|--|--|--|---------------------------------------|--|--|--|
| 1.1. Course title | TRANSPORT GEOGRAPHY | 1.8. Course code in ISVU | 129844 | | | |
| 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 (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | affic $\begin{array}{c} 1.11. \text{ Level of e- learning application } (1^{\text{st}}, 2^{\text{nd}}, 3^{\text{rd}} \text{ level}), \\ \text{percentage of on line course performance } (\text{max. } 20\%) \end{array} \qquad \begin{array}{c} 1^{\text{st}}, \text{ course materials are o} \\ 0\% \end{array}$ | | | | |
| 1.5. Course status (obligatory, optional) | Optional | 1.12. Number of course revisions 4 | | | | |
| 1.6. Year of study | 3 rd | 1.13. Modernization | X yes □ no | | | |
| 1.7. Credit score (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | |
| 2. COURSE DESCRIPTION | I | | | | | |
| 2.1. Course objectives | • | wledge and case studies: become familiar with the creation and xchange in the world, distinguish main transport corridors in E | | | | |
| 2.2. Terms of course entry and required competences | Four-year secondary education completed; qualification | on level 4.2 according to the CROQF | | | | |
| 2.3. Learning outcomes on the study programme level | LO1: To apply and link professional terms from technolin Croatian and English. | ology and organization of road traffic in written and oral commu | nication with the professional public | | | |
| | LO2: To organize and implement team work, and criti | cally judge the opinions and attitudes of team members. | | | | |
| | LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. | | | | | |
| | LO6: To analyze and present relevant facts from the fi | eld of traffic needed to reach conclusions. | | | | |
| | LO10: To compare and choose technical and technological solutions in traffic and/or goods flows. | | | | | |
| | LO12: To set up a minor traffic process and critically | evaluate it. | | | | |
| | Learning outcomes by Bloom: (maximum 2 werbs for | r LO) | Level of LO: 1- memory, | | | |



| 2.4. Expected learning | | | | | | 2- understandi | ng, |
|----------------------------------|--|--|----------------|--|---|--|------------|
| outcomes on the course level (4- | | | | | | 3- application, | |
| 10 learning outcomes) | | | | | | 4- analysis, | |
| | | | | | | 5- evaluation, | |
| | | | | | | 6- synthesis. | |
| | 1. | Present and comment on the histor | rical developn | nent of the traffic branches. | | 6, 3 | |
| | 2. | List and explain the main factors f | | 1, 2 | | | |
| | 3. | Analyze and evaluate world trade | in goods. | | | 4, 5 | |
| | 4. | Present and comment on the traffic | c connections | of the countries in Western, Central and Eastern | i Europe. | 6,4 | |
| | 5. | 5. List and compare major transport corridors in Asia, North America, and Europe. | | | | | |
| | 6. | 6. Comment on the objective and strategy of the Marco Polo Program and the current EU Transport White Paper. | | | | | |
| | 7. | 7. Use materials and tools to search scientific and professional literature in native and English languages. | | | | | |
| | 8. Present the acquired knowledge, ideas, problems, and solutions independently and in a team. | | | | | 6 | |
| 2.5. Course content according to | Constr | uctive allignement | | | | | |
| detailed curriculum schedule | | | | | | | |
| | No | Thematic unit | LO of the | Content/teaching methods | Evaluati | on | Time |
| | | | course | | | | needed |
| | 1 1 1 | T , 1 , | | | | | |
| | 1. | Introductory presentation | | Listening to the lecture. In the course of | | | |
| | 1. | (introducing students to the | | seminars, they are introduced to the course | | | |
| | 1. | · 1 | - | seminars, they are introduced to the course content and documents on the e-learning page | - | | 2 h |
| | 1. | (introducing students to the | - | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a | - | | 2 h |
| | 2. | (introducing students to the course content and obligations) | - | seminars, they are introduced to the course content and documents on the e-learning page | - At the colloquium | or written and | 2 h |
| | | (introducing students to the course content and obligations) | - | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. | At the colloquium of oral exam students | | 2 h |
| | | (introducing students to the course content and obligations) Development of transport | - | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a course lecture and read | - | can present, | 2 h |
| | | (introducing students to the course content and obligations) Development of transport branches throughout history | | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a course lecture and read literature. At the seminar lectures, they | oral exam students | can present, te the historical | |
| | | (introducing students to the course content and obligations) Development of transport branches throughout history | - 1, 7, 8 | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic | oral exam students comment and evaluat | can present, te the historical bad, rail and | 2 h 3 h |
| | | (introducing students to the course content and obligations) Development of transport branches throughout history | | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a 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 | oral exam students comment and evaluat development of ro | can present, te the historical oad, rail and oper created and | |
| | | (introducing students to the course content and obligations) Development of transport branches throughout history | | seminars, they are introduced to the course content and documents on the e-learning page of the course by working independently on a computer. They listen to a 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 | oral exam students comment and evaluat development of ro pipelines. Seminar pa | can present, te the historical oad, rail and oper created and | |



| 3. | Development of transport branches throughout history (water, air, postal and telecommunication) | 1, 7, 8 | They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or written and oral exam students can present, comment and evaluate the historical development of water, air and postal and telecommunications traffic. Seminar paper created and presented (by computer programs). | 3 h |
|----|--|-------------|---|--|-----|
| 4. | Development of transport branches throughout history (video films) | 1, 7, 8 | They use multimedia and network. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or the written and oral exam students can present maritime and airports in the world. Analyze and evaluate the role of rail transport. Describe the course of highway construction. Seminar paper created and presented (by computer programs). | 3 h |
| 5. | Factors for the formation of traffic flows (general, natural, social, economic) | 1, 2, 7, 8, | They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. | At the colloquium or the written and oral exam, students know how to define, enumerate and distinguish the main factors for the formation and development of commodity flows (general, natural and socio- economic factors). Identify the abbreviations of economic groups of the world. Seminar paper created and presented (by computer programs). | 4 h |
| 6. | Geographical location of transport corridors in Western Europe | 4, 5, 7, 8 | They listen to a course lecture and read literature. At the seminar lectures, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired | 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 | 3 h |



| 1 | | | Γ | | |
|----|------------------------------------|------------|--|--------------------------------------|-----|
| | | | knowledge and presents their own ideas, and | branches of transport. List the | |
| | | | ways to solve problems. | countries through which each | |
| | | | | transport corridor passes. Seminar | |
| | | | | paper created and presented (by | |
| | | | | computer programs). | |
| 7. | Geographical location of | | They listen to a course lecture and read | At the colloquium or the written and | 3 h |
| | transport corridors in Central and | | literature. At the seminar lectures, they | oral exam, students can define the | |
| | Eastern Europe | | individually explore the content of this topic | term traffic corridor. List and | |
| | | | area by searching the database, and on the | compare major transport corridors in | |
| | | | basis of it and reading the literature, create a | Poland, Czech Republic, Slovakia, | |
| | | 4 5 7 0 | seminar paper that presents the acquired | Hungary, Croatia, Bulgaria, | |
| | | 4, 5, 7, 8 | knowledge and presents their own ideas, and | Romania, Serbia, Greece, and | |
| | | | ways to solve problems. | Russia of all branches of transport. | |
| | | | · · | List the countries through which | |
| | | | | each transport corridor passes. | |
| | | | | Seminar paper created and presented | |
| | | | | (by computer programs). | |
| 8. | Geographical location of North | | They listen to a course lecture and read | At the colloquium or the written and | 3 h |
| | American transport corridors | | literature. At the seminar lectures, they | oral exam, students can define the | |
| | Ĩ | | individually explore the content of this topic | term traffic corridor. List and | |
| | | | area by searching the database, and on the | compare major traffic corridors of | |
| | | 4, 5, 7, 8 | basis of it and reading the literature, create a | Canada and the United States of all | |
| | | | seminar paper that presents the acquired | branches of transport. Seminar paper | |
| | | | knowledge and presents their own ideas, and | created and presented (by computer | |
| | | | ways to solve problems. | programs). | |
| 9. | Geographic location of traffic | | They listen to a course lecture and read | At the colloquium or the written and | 3 h |
| | corridors in Asia | | literature. At the seminar lectures, they | oral exam, students can define the | |
| | | | individually explore the content of this topic | term traffic corridor. List and | |
| | | 4570 | area by searching the database, and on the | compare major transport corridors in | |
| | | 4, 5, 7, 8 | basis of it and reading the literature, create a | East and South Asia (China, Japan, | |
| | | | seminar paper that presents the acquired | South Korea, Singapore) of all | |
| | | | knowledge and presents their own ideas, and | branches of transport. List the | |
| | | | ways to solve problems. | countries through which each | |
| I | 1 | | | 6 | |



| 10. Spatial distribution of food flows (meat, fruits and vegetables, cereals) They listen to a course lecture and read literature, they individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create and presented (by computer programs). At the colloquium or the written and the concept of traffic flow. Categorize, analyze and evaluate the basis of it and reading the literature, create and presents their own ideas, and the vordet. List the countries with the largest importers and exporters of all types of food. Seminar paper treated and presents their own ideas, and on the vordet cate of oil, petroleum programs). Image: the trade in fruits and vegetables, milk and any products, meat, fish in the vordet cate of the concept of traffic flow. Categorize, analyze and evaluate the trade in fruits and vegetables, milk and any products, meat, fish in the vordet categorize, analyze and evaluate the trade in fruits and vegetables, milk and any products, meat, fish in the vordet categorize, analyze and evaluate the trade in fruits and exaporters of all types of food. Seminar paper created and presented (by computer programs). 11. Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore) They listen to a course lecture and read to and reading the literature, create and neading the database, and on the basis of it and reading the literature, create and and anatorial. Seminar paper that presents the acquired word trade of oil, petroleum products, cotton, bauxite, iron ore, ways to solve problems. 4 h 12. Spatial distribution of industrial They listen to a course lecture and read and presents the courties and exporters of all types of raw materials. Seminar paper created and presents the | 1 | 1 | | | 1 | |
|--|-----|---|------------|--|--------------------------------------|------|
| Image: computer programs). computer programs). computer programs). computer programs). 10. Spatial distribution of food flows (meat, fruits and vegetables, cereals) They listen to a course lecture and read 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 mays to solve problems. At the colloquium or the written and dairy products, meat, fish in the 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 largest importers of all types of food. Seminar paper created and presented (by computer programs). 4 th 11. Spatial distribution of natural gas, cotton, bauxite, iron ore) They listen to a course lecture and read in a reading the literature, create a seminar paper that presents the acquired knowledge and presents thei | | | | | | |
| 10. Spatial distribution of food flows (meat, fruits and vegetables, cereals) They listen to a course lecture and read literature. At the seminar lectures, they area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired howledge and presents their own ideas, and raw material flows (oil, natural gas, cotton, bauxite, iron ore) 1. Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore) 2, 3, 7, 8 They listen to a course lecture and read nowledge and presents their own ideas, and ways to solve problems. At the colloquium or the written and categorize, analyze and evaluate 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) They listen to a course lecture and read literature. At the seminar lectures, they area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired howledge and presents their own ideas, and ways to solve problems. At the colloquium or the written and 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 | | | | | paper created and presented (by | |
| (meat, fruits and vegetables, cereals)(meat, fruits and vegetables, cereals)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 and presents their own ideas, and ways to solve problems.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 th11.Spatial distribution of natural gas, cotton, bauxite, iron ore)2, 3, 7, 8They listen to a course lecture and reading the literature, streat a sof it and reading the 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 sof it and reading the literature, create a and presents their own ideas, and on the basis of it and reading the literature, create a sof it and reading the literature, and presents their own ideas, and 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 | | | | | computer programs). | |
| ecreals)individually explore the content of this topic area by searching the database, and on the basis of it and reading the literature, create as seminar paper that presents their own ideas, and mays to solve problems.define the concept of traffic flow. Categorize, analyze and evaluate the trade in fruits and vegetables, milk and dairy products, meant, fish in the World. List the countries with the largest importers and exporters of all | 10. | Spatial distribution of food flows | | They listen to a course lecture and read | At the colloquium or the written and | 4 h |
| area by searching the database, and on the basis of it and reading the literature, create a seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems.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).11.Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore)They listen to a course lecture and read 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 out a lexam, 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 | | (meat, fruits and vegetables, | | literature. At the seminar lectures, they | oral exam, students know how to | |
| Image: space of the second s | | cereals) | | individually explore the content of this topic | define the concept of traffic flow. | |
| 11.Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore)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 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, ad natural gas. List the countries with the largest importers and exporters of all types of food summary programs).4 h | | | | area by searching the database, and on the | Categorize, analyze and evaluate the | |
| 11.Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore)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 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, ad natural gas. List the countries with the largest importers and exporters of all types of food summary programs).4 h | | | | basis of it and reading the literature, create a | trade in fruits and vegetables, milk | |
| Image: Second | | | 2, 3, 7, 8 | seminar paper that presents the acquired | - | |
| Image: space of the second stateImage: space of the second stateImage: space spa | | | | | | |
| 11.Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore)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, ad 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). | | | | | | |
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| Image: space s | | | | | | |
| 11.Spatial distribution of natural raw material flows (oil, natural gas, cotton, bauxite, iron ore)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). | | | | | | |
| raw material flows (oil, natural gas, cotton, bauxite, iron ore) 2, 3, 7, 8 | 11 | Spatial distribution of natural | | They listen to a course lecture and read | | 4 h |
| gas, cotton, bauxite, iron ore)gas, cotton, bauxite, iron ore)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.define the concept of goods traffic. Categorize, analyze and evaluate the | 11. | - | | • | - | 1 11 |
| 2, 3, 7, 8 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. (b) 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). | | - | | - | | |
| 2, 3, 7, 8 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. List the countries with the largest importers and exporters of all types of raw materials. Seminar paper created and presented (by computer programs). | | gas, cotton, bauxic, non ore) | | | · · · | |
| 2, 3, 7, 8 seminar paper that presents the acquired knowledge and presents their own ideas, and ways to solve problems. ways to solve problems. | | | | | | |
| 2, 3, 7, 8 knowledge and presents their own ideas, and ways to solve problems. 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). | | | | u | | |
| ways to solve problems. with the largest importers and exporters of all types of raw materials. Seminar paper created and presented (by computer programs). | | | 2, 3, 7, 8 | | | |
| exporters of all types of raw materials. Seminar paper created and presented (by computer programs). | | | | • • | _ | |
| materials. Seminar paper created and presented (by computer programs). | | | | ways to solve problems. | | |
| and presented (by computer programs). | | | | | | |
| programs). | | | | | 1 1 | |
| | | | | | | |
| 17 I Spatial distribution of industrial 1 They listen to a course lecture and read 1 Δt the colloquium or the written and 1 A h | 10 | | | | | |
| | 12. | Spatial distribution of industrial | | They listen to a course lecture and read | At the colloquium or the written and | 4 h |
| product flows (cars, machines, literature. At the seminar lectures, they oral exam, students know how to | | 1 · · · · · · · · · · · · · · · · · · · | | | , | |
| electronics, ships) individually explore the content of this topic define the concept of goods traffic. | | electronics, ships) | | | | |
| 2, 3, 7, 8 area by searching the database, and on the Categorize, analyze and evaluate the | | | 2, 3, 7, 8 | | | |
| basis of it and reading the literature, create a progress of trade in cars, electronic | | | | | | |
| seminar paper that presents the acquired products, ships, machines in the | | | | seminar paper that presents the acquired | | |
| World. List the countries with the | | | | | World. List the countries with the | |



| 1 | | | | | | | | | |
|----------------------------------|---|---|-------------------|-------------|-------------------------------|---------------------------|-----------------------------|------------------|-----------|
| | | | | | knowledge and presents | their own ideas, and | 0 1 | - | |
| | | | | | ways to solve problems. | | industrial products. Se | | |
| | | | | | | | created and presented | (by computer | |
| | | | | | | | programs). | | |
| | 13. | 13. Marco Polo Program (program They listen to a course lecture and read | | | | e lecture and read | At the colloquium or the | | 3 h |
| | | • • • | gram activities, | | literature. They use | | oral exam, students ca | | |
| | | program projects | s) | | networkAt the semin | | goal and strategy of the | e Marco Polo | |
| | | | | | individually explore the | - | program. Distinguis | | |
| | | | | 6, 7, 8 | area by searching the d | atabase, and on the | Marco Polo. Critically | evaluate the | |
| | | | | | basis of it and reading th | | professional video fil | | |
| | | | | | seminar paper that pre- | esents the acquired | Seminar paper created a | and presented | |
| | | | | | knowledge and presents | their own ideas, and | (by computer programs | 5). | |
| | | | | | ways to solve problems. | | | | |
| | 14. | - | White Paper on | | They listen to a cours | | At the colloquium or | | 3 h |
| | | - · | te Paper titles, | | literature. At the sem | • | oral exem, students k | | |
| | | • | as, preparing the | | individually explore the | - | define the objective an | ••• | |
| | | European transport area for the $6, 7, 8$ area by searching the database, and on the the | | | | | | - | |
| | | | for developing a | 0, 7, 0 | basis of it and reading th | | transport. Comment | | |
| | | - | nd sustainable | | seminar paper that pre- | - | professional projects in | | |
| | | 1 . | , strategy - what | | knowledge and presents | their own ideas, and | transport. Seminar pape | | |
| | | needs to be done | | | ways to solve problems. | | presented (by computer | r programs). | |
| | 15. | | ations/Repeating | _ | They listen to a course | | _ | | 45 h |
| | | and preparing fo | or the exam. | | individuals for the exam. | | | | |
| 3. EVALUATION OF STUE | DENT W | ORK | | | | | | | |
| 3.1. Student obligations | In acco | rdance with the R | ulebook on Study | and the Rul | ebook on Student Assessmer | nt and Evaluation: for | all full-time students atte | endance of at le | east 70%. |
| | | | - | | east 50%. All students must | | • • • | | |
| | have achieved during the course: from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot earn ECTS credits, and must re-enroll in the next | | | | | | | | |
| | | academic year; from 25 - 49,9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in a | | | | | | | |
| | - | • | - | | students have the right to ta | | | | |
| | | | - | - | tinuous monitoring of stude | nts (active participation | on in classes and through | two exams); b |) passing |
| | | m (written and ora | - | n). | | 1 | | 1 | |
| 3.2. Student work monitoring | Atter | nding classes | 0,5 | | Written exam | 1 (without | Project | | |
| (enter the share of ECTS credits | | | | | | colloqiums) | | | |



| for each activity so that the total | Experimental work | | Research | | Practical work | | |
|--|-------------------------|-------------------------------------|--------------------------------|-------------------------|--|--|--|
| number of ECTS credits | Esaay | | Report | | Continuous check | | |
| corresponds to the course credit value) | Colloquiums | 1 (without written part of exam) | Seminar paper | 0,5 | (other) | | |
| | Teaching activities | 0,5 | The oral part of exam | 0,5 | (other) | | |
| 3.3. Student work-load | Student workload on all | bases is 1 ECTS credit for 30 sen | nester hours and is assessed a | as attendance (30 hours | s), preparation of semina | ar work and presentation | |
| | (15 hours), preparation | for the midterm/exam through se | lf-study (45 hours). | | | | |
| 4. GRADING SYSTEM | | | | | | | |
| 4.1. Evaluation of seminar paper | Elements of | Bad | Satisfy | ing | Above | average | |
| | evaluation | | | | | | |
| | Organization | The paper is not organized in a | The paper is well stru | ctured with a clear | The paper is well s | structured with a clear | |
| | | logical order and lacks | distinction between the in | ntroduction, the main | distinction between th | e introduction, the main | |
| | | structure. | body of the text and the c | onclusion. | body of the text and the conclusion, which are | | |
| | | | | | logically interconnected. | | |
| | Terminolog, writing | Words and expressions are not | Words and expressions an | e in line with official | Words and express | Words and expressions are aligned with | |
| | style | in line with official | terminology. The writing | style is appropriate, | official terminology and show an | | |
| | | terminology. The writing style | the sentence structure is | clear, the vocabulary | understanding of the | r meaning. The writing | |
| | | is not appropriate, the | is appropriate and there | are few grammatical | style is excellent, the | sentences are clear and | |
| | | sentences are too long, of a | errors. | | concise, the vocabula | ary is rich and there are | |
| | | modest vocabulary and with | | | no grammatical error | s. | |
| | | frequent and repeated | | | | | |
| | | grammatical errors. | | | | | |
| | Citing and | The sources are not listed at all. | The sources are listed but | t incomplete and with | The sources are accu | urately, completely and | |
| | referencing | The references do not fit the | errors. The references are | e relevant to the topic | consistently listed. | The references are | |
| | references | topic and show a cursory | and show a satisfactory re | esearch attitude. | appropriate, their | list is "rich" and | |
| | | approach to exploring the | | | comprehensive and sl | nows a detailed research | |
| | | topic. | | | approach. | | |
| 4.2. Gradeing of the colloquium/written and oral | | Bad | Satisfy | ing | | average | |
| exam | It responds by memory, | without a deeper understanding. | It reproduces the basic of | concepts and without | Knowledge is at t | he level of analysis, | |
| | · · · | ply basic terms and concepts. It | difficulty imparts new kn | | synthesis, and evalu | ation. It observes the nd thoroughly explains | |



| | 1 (1 1 | 1 11 4 | | 1 | 4 | | |
|-----------------------------------|--------------------------------------|---|----------------------------------|----------|---------------------------|----------------------------|--|
| | | apply or explain the contents of | the material, explains the ter | - | | | |
| | | | | - | ns the terms and concepts | | |
| | | | | | | with examples. Finds | |
| | | | | | | e not originally given. It | |
| | | | | | notes correlations w | vith related material. | |
| 4.3. Forming the final grade | Active attendance on | 70-75% attendance | 76-86% attendance | 87 100% | attendance | Mental map created, | |
| according to the evaluation | class | 70-75% attendance | 70-00% attendance | 07-100/0 | attendance | Case studies resolved | |
| elements | | 2 points | 4 points | 7 p | ooints | 3 points | |
| | Seminar paper | 2 | 3 | | 4 | 5 | |
| | Seminar paper | 5 points | 7 points | 8 p | ooints | 10 points | |
| | | 2 | 3 | | 4 | 5 | |
| | Colloquiums/ Written part of exam | 50 - 64,9% | 65 - 79,9% | 80 - | 89,9% | 90 - 100% | |
| | written part of exam | 25 points | 30 points | 35 | points | 40 points | |
| | | 2 | 3 | | 5 | 5 | |
| | Oral part of exam | 25 points | 30 points | 35 | points | 40 points | |
| 4.4. Formation of the final grade | Percentage of acqu | ired knowledge, skills and | Numerical grad | de | ECTS grade | | |
| based on the absolute | competencies (| (teaching + final exam) | | | | | |
| distribution | 9 | 0 - 100% | 5 (excellent) | | | А | |
| | 80 | 0-89,9% | 4 (very good) |) | В | | |
| | 65 | 5 – 79,9% | 3 (good) | | | С | |
| | 60 | 0 - 64,9% | 2 (sufficient) | | | D | |
| | 50 | 0 – 59,9% | 2 (sufficient) |) | | Е | |
| 5. ADDITIONAL INFORMAT | ION ABOUT COURSE | | I | | | | |
| 5.1. Compulsory literature | | Title | | Numb | er of copies in the | Availability via other | |
| (available in the library and via | | | | | library | media | |
| other media) | Sego Darijo: Traffic co | orridors and merchandise flows, | Script for internal use, Polytee | chnic of | | e-learning system | |
| | Sibenik, Sibenik 2016. | | | | | | |
| | XX7 11, 1 | | | | . | | |
| | World trade organizatio | n <u>http://www.wto.org/</u> (selected of | chapters) | | - | Internet website | |



| | Transport in EU http://ec.europa.eu/transport/index_en.htm (selected chapters) | - | Internet website | | | | |
|------------------------------------|---|---|-----------------------------|--|--|--|--|
| 5.2. Additional literature (at the | Teaching materials from lectures and seminars on the e-Learning system of the Polytechnic of - e-learning | | | | | | |
| moment of changes and/or | Sibenik for the mentioned course. | | | | | | |
| amended of study programme) | International trade statistics https://www.trademap.org/Index.aspx | | Internet website | | | | |
| | UN agency for food http://www.fao.org/home/en/ | | Internet website | | | | |
| 5.3. Quality assurance methods | The control of students' work quality and the acquisition of necessary knowledge and skills will be | e ensured through interactive v | vork. By keeping track of | | | | |
| that ensure the acquisition of | attendance and student activity during classes and provided information on students` progress three | attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for | | | | | |
| knowledge, skills and | further guidance to students will be provided in order to increase the efficiency of their work. Stud | further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations | | | | | |
| competences | as well as the methods of work and the required literature. Indicators of quality assurance system | m: Student survey, monitoring | g 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 | It is the responsibility of each student to be regularly informed about the course, the coursework, an | nd classroom activities. All not | ices of classes or possible | | | | |
| and contacting the course | adjournment will be published in a timely manner on the e-learning site of the course and on the w | vebsite of the Polytechnic. Stuc | lents can contact teachers | | | | |
| lecturer | 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 answer | ed as soon as possible (no late | er than five working days | | | | |
| | after receiving the e-mail). | | | | | | |



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

| 1. GENERAL INFORMATION | 1. GENERAL INFORMATION | | | | | | | |
|--|---|---|--|--|--|--|--|--|
| 1.1. Course title | TRAFFIC IN TOURISM | 1.8. Course code at ISVU | 142664 | | | | | |
| 1.2. Course lecturer | Ana-Mari Poljičak, grad. eng. traff., senior lecturer | 1.9. Course code at MOZVAG | - | | | | | |
| 1.3. Assistants and/or associates | MSc. Martina Ljubić Hinić, senior lecturer | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (30 + 0 + 15 + 0) | | | | | |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional study of Traffic | 1.11. Level of e- learning application (1 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 | X yes \Box no | | | | | |
| 1.7. Credit point (ECTS) | 3 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore 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 | | | | |
| | LO1: Use and link professional terms in road traffic technology and organization in written and oral communication with the professional public in Croatian and English. | | | |
| 2.3. Learning outcomes on the | LO2: Organize and conduct teamwork, and critically evaluate the opinions and attitudes of team stakeholders. | | | |
| study programme level | LO3: Independently and responsibly search, interpret and integrate relevant literature needed to reach conclusions. | | | |
| | LO6: Analyze and interpret relevant road transport facts needed to reach conclusions. | | | |



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

| | Constr | ructive allignement | | | | |
|---|--------|--|------------------|---|--|----------------|
| 2.5. Course content according to detailed curriculum schedule | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | Time needed |
| | | 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 |
| | 1. | 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 | 6 h |



| 1 | | | | | | |
|---|----|---|---------------|---|---|-----|
| | | | | 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. | 6 h |
| | 4. | Traffic as part of a tourist product. | 1, 2, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can define trips and multi-day bus trips. Explain panoramic and shuttle transportation. Give an example of local tourist lines. Define the rental of road vehicles in a tourist destination. List ways to use your bike while on vacation. Seminar paper created and presented (using computer programs independently). | 6 h |
| | 5. | Traffic as part of a tourist product. | 1, 2, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the | 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 | 6 h |



| 1 | | | | | | |
|---|----|---|---------------|---|---|------|
| | | | | brainstorming method and the discussion method on the topic are applied. | of river-lake-canal round-trip cruises. Seminar paper created and presented (using computer programs independently). | |
| | 6. | Field teaching - travel agency Pražen putovanja d.o.o. | 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can explain the excursions and multi-day bus trips, explain the rental of road vehicles in the tourist destination and give an example of panoramic and shuttle transportation. Seminar paper created and presented (using computer programs independently). | 5 h |
| | 7. | Guest lecture in English: Tourism and Railways (Basic knowledge), Glacier Express - the slowest express Train in the World, the Trans-Siberian Railway (Russian tourism offer). | 1, 3, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can describe the first rail trip in the World. Give an example of rail transport as part of a tourism product and describe it. Define high-speed rail and give examples. Seminar paper created and presented (using computer programs independently). | 9 h |
| ٤ | 8. | The repetitionandpreparationforthecolloquium.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 |



| 1 | | | | | | |
|---|-----|---|------------|---|---|-----|
| | 10. | Field teaching - Dogus Marine in Šibenik (Mandalina) | 1, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can explain the purpose of marinas and rent a boat. Seminar paper created and presented (using computer programs independently). | 5 h |
| | 11. | Logistics in tourism | 1, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can enumerate the elements of the logistics system and distinguish between the logistics models. Comment on the role of logistics processes in supplying a tourist destination. Seminar paper created and presented (using computer programs independently). | 6 h |
| | 12. | Economics of Exploitation of Traffic Vehicles and Traffic Infrastructure. | 1, 2, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the group work on seminar teaching, the brainstorming method and the discussion method on the topic are applied. | At the colloquium or the written and oral exam they can state the determinants of the quality of the transport service in tourism. Define the fare and explain the specificities of costs and fares in individual traffic branches. Seminar paper created and presented (using computer programs independently). | 5 h |
| | 13. | Economics of Exploitation of Traffic Vehicles and Traffic Infrastructure. | 1, 2, 4, 5 | They listen to a lecture and read literature. At the seminar teaching, they individually explore the content of this topic area by searching the database, and on the basis of it and the literature read, create a seminar paper that presents the acquired knowledge. In the | At the colloquium or the written and oral exam they can define and list the types of oscillations. Explain measures to mitigate the effects of oscillations. Seminar paper created and presented (using computer programs independently). | 5 h |



| | | | | | seminar teaching, the od and the discussion are applied. | | | |
|--|----------------------------|--|---------|---|--|--|----------------|------|
| | 14. Parking destination | in tourist s. Colloquium II. | 1, 4, 5 | the seminar teach explore the content searching the databa and the literature reac that presents the acq group work on | re and read literature. At ing, they individually of this topic area by se, and on the basis of it d, create a seminar paper juired knowledge. In the seminar teaching, the od and the discussion are applied. | At the colloquium or writte knows define basic terms differentiate ways of pa destinations. | of parking and | 3 h |
| | | g considerations. and preparing for | | They listen to a individually for the e | lecture and prepare exam. | - | | 17 h |
| 3. EVALUATION OF STUDEN | T WORK | | | | | | | |
| 3.1. Students' obligations In accordance with the Rulebook on Study and the Rulebook on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend a class of at least 50%. All students must create, present and positively colloquy seminar paper. Students who have achieved during the course: From 0 - 24.9% of ECTS credits - they are rated F (unsuccessful) and cannot earn ECTS credits and must re-enroll in the next academic year; From 25-49.9% - are assessed by FX (insufficient) and must pass and pass the written exam (test). Written exam (test) can be held in regular or extraordinary exam period; More than 50% - students have the right to take the final exam. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and preparation of a mental map and case study, preparation and presentation of seminar work) and passing exams (written and oral part of the exam). | | | | | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Attendance | | Wri | itten exam | 1,5 (without colloquia) | Project | | |
| for each activity so that the total | Experimental work | | Res | earch | | Practical work | | |



| number of ECTS points corresponds to the credit score | Essay | | Report | | | Continuous examination | |
|--|---|-----------------------------|------------------------------|-------|-------------------|---------------------------|--|
| of the course) | Colloquium | 1,5 (without written exam) | Seminar paper | 0,5 | 5 | Other | |
| | Class activity | 0,5 | Oral exam | 0,5 | 5 | Other | |
| | Student workload or | n all bases is 1 ECTS credi | t 30 semester hours and is e | estin | nated as: | | |
| | Obligation | | | | Hours (estimated) | | |
| 3.3. Student workload | 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

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



| | | Bad | Satisfying | Satisfying | | | Above average | | |
|--|---|--|---|---------------|---|------------|--|--|--|
| 4.2. Grading of the colloguium / written and oral exam | It responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples. | | It reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts that it supports with examples. | | ds the material, and logically connects and explain | | between the legality, y explains the content of ly connects and explains s that it supports with tions that were not | | |
| | Active | 70-75% of the presence | 76-86% of the presence | 87-100% of th | ne presence | Ca | se studies resolved | | |
| | attendance | 2 points | 4 points | 7 poi | nts | | 10 points | | |
| | Seminar paper | 2 | 3 | 4 | 4 | | 5 | | |
| 4.3. Forming the final grade | Semma paper | 5 points | 7 points | 8 poi | nts | | 10 points | | |
| according to the evaluation | Examination / | 2 | 3 | 4 | | | 5 | | |
| elements | Written | 50-64,9% | 65-79,9% | 80-89 | 9% | | 90-100% | | |
| | examination | 25 points | 30 points | 35 poi | | | 40 points | | |
| | Oral part of the | 2 | 3 | 4 | | | 5 | | |
| | exam | 25 points | 30 points | 35 points | | | 40 points | | |
| | Ũ | of acquired knowledge, skills and ences (teaching + final exam) | Number rating | Number rating | | ECTS grade | | | |
| 4.4. Formation of final grade | | 90 - 100% | 5 (excellent) | 5 (excellent) | | А | | | |
| based on absolute distribution | | 80 - 89,9% | 4 (very good) | | В | | | | |
| based on absolute distribution | | 65 - 79,9% | 3 (good) | | С | | | | |
| | | 60 - 64,9% | 2 (sufficient) | | D | | | | |
| | | 50 - 59,9% | 2 (sufficient) | | | E | | | |
| 5. ADDITIONAL INFORMAT | ION ON THE SUB | JECT | | | | | | | |
| | | Title Number of copies in the library Availability via off media | | | | | Availability via other media | | |



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



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

| 1. GENERAL INFORMATION | 1. GENERAL INFORMATION | | | | | | | | |
|--|--|---|--|--|--|--|--|--|--|
| 1.1. Course title | SAFETY AND PROTECTION OF TRANSPORT PROCESSES | 1.8. Course code at ISVU | 214577 | | | | | | |
| 1.2. Course lecturer | Ana-Mari Poljičak, grad. eng. traff., senior lecturer | 1.9. Course code at MOZVAG | | | | | | | |
| 1.3. Assistants and/or associates | MSc. Martina Ljubić Hinić, senior lecturer | 1.10. Forms of teaching (number of hours Lecturing + Practical exercises + Seminars + e-learning) | (45 + 0 + 15 + 0) | | | | | | |
| 1.4. Study programme(specialist, undergraduate, graduate) | Undergraduate professional study of 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 | X yes \Box no | | | | | | |
| 1.7. Credit point (ECTS) | 5 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore 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 programme level | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English. LO2: To organize and implement team work, and critically judge the opinions and attitudes of team members. LO3: To individually and responsibly search, interpret and integrate the relevant literature needed to make decisions. |



| | LO5: To apply basic legal and economic principles in organization with socially responsible management in technical-technolo | gical subjects. | | | | | | |
|------------------------------|--|-------------------|--|--|--|--|--|--|
| | LO6: To analyze and present relevant facts from the field of traffic needed to reach conclusions. | | | | | | | |
| | LO9: To assess and organize processes in the area of road traffic and/or traffic logistics. | | | | | | | |
| | LO10: To compare and choose technical and technological solutions in traffic and/or goods flows. | | | | | | | |
| | LO11: To identify, predict and propose solutions in road traffic technology and technique. | | | | | | | |
| | LO12: To set up a minor traffic process and critically evaluate it. | | | | | | | |
| | LO13: To track trends in the development of technique, technology and safety in traffic. | | | | | | | |
| | | LO level: | | | | | | |
| | | 1- recollection, | | | | | | |
| | | 2- understanding, | | | | | | |
| | Learning outcomes according to Bloom's taxonomy: | 3- application, | | | | | | |
| | | | | | | | | |
| | | 5- evaluation, | | | | | | |
| 2.4. Expected learning | | 6- synthesis | | | | | | |
| outcomes on the course level | 1. demonstrate knowledge and understanding of the course content by defining and describing basic concepts related to | | | | | | | |
| | safety and protection of transport processes, | 1, 1 | | | | | | |
| | 2. distinguish and comment on the basic characteristics of hazardous substances in the transport system, | 2, 4 | | | | | | |
| | 3. connect and critically evaluate technological procedures related to traffic safety and protection, | 3, 5 | | | | | | |
| | 4. select appropriate packaging and accompanying documentation for the transport of dangerous goods, | 3 | | | | | | |
| | 5. present the acquired knowledge independently and in a team. | 6 | | | | | | |

| | Cons | tructive allignement | | | | |
|----------------------------------|------|---|------------------|---|------------|----------------|
| 2.5. Course content according to | no | Thematic unit | LO of the course | Content/teaching methods | Evaluation | Time needed |
| detailed curriculum schedule | 1. | Introduction into the course and detailed plan. | - | They listen to a lecture. During the individual work on the computer, they are introduced to the course content and | _ | 2 h |



| | | | documents on the e-learning page of the course. | | |
|----|--|------|---|---|-----|
| 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | At the colloquium or written and oral exam, they can state and explain what the regulations of protection and safety in traffic refer to with regard to 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 |



| 1 | | | | | | |
|---|----|---|------------------------|---|--|------|
| | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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, 2, 3, 4, 5, 6, 7 | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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). | 5 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 |



| 1 | | | | | | |
|----------------------------|-------|---|--|---|---|------------------------|
| | | | | research the content of this thematic area by searching the database, and on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 on the basis of it and the read literature, they prepare a seminar paper which presents the acquired knowledge. In the seminar classes, the brainstorming method and the method of discussion on the presented topic are applied. | 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 STUDE | NT WO | DRK | | | | |
| 3.1. Students` obligations | Part- | time students are required to attend achieved during the course: • From 0 - 24.9% of ECTS credi | a class of at 1 its - they are r by FX (insuff | lebook on Student Assessment and Evaluatio least 50%. All students must create, present ated F (unsuccessful) and cannot earn ECTS icient) and must pass and pass the written ex- | and positively colloquy seminar paper. Stud | lents who nic year; |



| | 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). | | | | | | | | |
|---|--|---------------|---|---|--------|--|---|---|---|
| | Attendance | | | Written exam | | 3 (without colloquia) | Project | | 1 |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | | Research | | | Practica | ıl work | |
| for each activity so that the total number of ECTS points | Essay | | | Report | | | Continuous examination | | |
| corresponds to the credit score of the course) | Colloquium | 3 (wi exam | thout written | Seminar paper | | 0,5 | Other | | |
| | Class activity | 0,5 | | Oral exam | | 1 (without Colloquium) | Other | | |
| 3.3. Student workload | Student workload or Preparation for the n | | | it 30 semester hours a | and is | estimated as: Attendance | 60 h, Des | ign of seminar w | ork and presentation 20 h, |
| 4. GRADING SYSTEM | | | | | | | | | |
| | Element of evalua | tion | В | ad | | Satisfying | | Ab | ove average |
| 4.1. Grading of seminar work | Organization | | | The paper is not organized in a logical order and lacks structure. | | The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion. | | distinction between the introduction, the main body of the text and the conclusion, which are logically interconnected. | |
| 4.1. Grading of seminar work | Terminology, wr style | riting | official terminolog is not appropriate, t long, of a modest | 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. | | ds and expressions are in l cial terminology. The writi ppropriate, the sentence stru r, the vocabulary is appropriate e are few grammatical error | words and expressions are aligned with official terminology and show and understanding of their meaning. The writing style is excellent, the sentence are clear and concise, the vocabulary i | | ology and show an of their meaning. The excellent, the sentences oncise, the vocabulary is |



| | 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. | | | nplete an es are are now a co | he sources are accurately, completely nd consistently listed. The references re appropriate, their list is "rich" and comprehensive and shows a detailed esearch approach. | | |
|--|---|---|------------------|--|--|---|---------------------------|
| | | Bad | | Satisfying | | | Above average |
| 4.2. Grading of the colloguium / written and oral exam | understanding. D terms and concept | memory, without a deeper oes not know or apply basic s. Does not know how to apply contents of the course with | difficulty impar | he basic concepts new knowled plains the terms a | ge, understands | Knowledge is at the level of analysis, synthesis and evaluation. It observes the legality, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts that it supports with examples. Finds solutions that were not originally given. It notes correlations with related material. | |
| | Active | 70-75% of the presence | 76-80% of | the presence | 81-90% of t | he presence | e 91-100% of the presence |
| | attendance | attendance 2 points | | oints | 7 ро | ints | 10 points |
| | Sominor popor | 2 | | 3 | 4 | | 5 |
| 4.3. Forming the final grade | Seminar paper | 5 points | 7 pc | oints | 8 po | ints | 10 points |
| according to the evaluation | Examination / | 2 | | 3 | 4 | | 5 |
| elements | Written | 50-64,9% | 65-7 | 9,9% | 81-89 | 9,9% | 90-100% |
| | examination | 25 points | 30 p | points | 35 p | oints | 40 points |
| | Oral part of the | 2 | | 3 | 5 | | 5 |
| | exam | 25points | 30 p | points | 35 p | oints | 40 points |
| 4.4. Formation of final grade | | f acquired knowledge, skills and nces (teaching + final exam) | Number rating | | | ECTS grade | |
| based on absolute distribution | | 90 - 100% | | (excellent) | | | A |
| | | <u>80 - 89,9%</u> <u>65 - 79,9%</u> | 4 | (very good) 3 (good) | B C | | |



| | 60 - 64,9% | 2 (sufficient) | | D | | | |
|---|---|---|------------------------------------|---------------------------------|------------------------------|--|--|
| | 50 - 59,9% | 2 (sufficient) | | Е | | | |
| 5. ADDITIONAL INFORMATI | ON ON THE SUBJECT | | | | | | |
| 5.1. Required literature | Title | | | Number of copies in the library | Availability via other media | | |
| (available in the library and through other media) | Bukljaš Skočibušić M., Bukljaš Z.: Protection in traffi University of Zagreb, Zagreb, 2015. Aurer Jezerčić I., Žunić M.: Transport of dangerous good development d.o.o., Zagreb, 2020. (selected chapters) | | | 3 3 | No 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: Ord conditions and manner of performing transport in ma dangerous goods, bulk and other cargo in ports, and the n in ports (NN 51/05, 127/10, 34/13, 88/13, 79/15), Zagreb. Perić T., Ivaković Č.: Protection in traffic process, Facult of Zagreb, Zagreb, 1996 Croatian Parliament: Law on Transport of Dangerous Goo | aritime transport, loading and nanner of preventing the spread , 2005. ty of transport and traffic science | unloading of dois lof spilled oils | 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 | | | | | | |
| 5.4. Informing about the course and contacting the teacher | It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail). | | | | | | |



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

| 1. GENERAL INFORMATION | ON | | | | | | | |
|--|--|---|---|--|--|--|--|--|
| 1.1. Course title | PROFESSIONAL PRACTICE | 1.8. Course code in ISVU | 214573 | | | | | |
| 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 (specialist, undergraduate, graduate) | Undergraduate professional 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 | X yes □ no | | | | | |
| 1.7. Credit score (ECTS) | 15 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ | | | | | |
| 2. COURSE DESCRIPTION | | | | | | | | |
| 2.1. Course objectives | | the practical work of legal entities that perform transport activi nd work. Thanks to the previously acquired theoretical knowl ad 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 | | | | | | |
| | LO1: To apply and link professional terms from technology and organization of road traffic in written and oral communication with the professional public in Croatian and English, | | | | | | | |
| 2.3. Learning outcomes on the | LO3: To individually and responsibly search, interpret and | nd integrate the relevant literature needed to make decisions, | | | | | | |
| study programme level | LO4: To apply knowledge from the field of natural and t | echnical sciences to problems in road traffic, | | | | | | |
| | LO6: To analyze and present relevant facts from the field | d of traffic needed to reach conclusions, | | | | | | |
| | LO9: To assess and organize processes in the area of roa | d traffic and/or traffic logistics, | | | | | | |



| | LO11 | : To identify, predict and propose solution | utions in ro | ad traffic technology and technique, | | | | |
|--|-------|---|---|---|-----------|------------|------|--|
| | LO12 | 2: To set up a minor traffic process and | d critically | evaluate it. | | | | |
| | Lear | ning outcomes by Bloom: (maximum | Level of LO: 1- memory, 2- understanding, 3- application, 4- analysis, 5- evaluation, 6- synthesis. | | | | | |
| 2.4. Expected learning outcomes on the course level (4-10 learning outcomes) | 1 | engaged in transport. | - | e from the course and practical knowledge from | a company | 3, 4 | | |
| | 2 | 1 | 1 | | | 4 | | |
| | 3 | Analyze and critically evaluate the | | 4, 5 | | | | |
| | 4 | 1 5 1 | 6 | | | | | |
| | 5 | | 3,4 | | | | | |
| | 6 | 5. To propose and choose the best so | lution for i | mproving the business processes of a transport com | npany. | 6, 5 | | |
| 2.5. Course content according to detailed curriculum schedule | Cons | tructive allignement | | | | | | |
| | No | Thematic unit | LO of the course | Content/teaching methods |] | Evaluation | Time | |
| | 1. | Execution of the Professional practice | Practice Diary prepared d. | 450 h | | | | |
| 3. EVALUATION OF STUD | ENT V | WORK | | | | | | |
| 3.1. Student obligations | | | | ng professional practice as well as the conditions and are prescribed by the Ordinance on professional | | | | |



| | activities, which is dete be admitted to a profess on professional practice conscientiously and hor internship, adhere to th practice and takes care to internship (Appendix 4 the practice, the authori internship (Annex 5 of practice and the Certifi professional practice, a Practice Diary, he/she e accept the Professional Professional Practice co cease to exist. The study or after learning about to jobs that correspond to to in which he is obliged to practice) and a certifica | rmined by the holder of the court sional internship, the course leade). Professional practice is perform nestly perform the tasks entrusted e prescribed measures of safety a that his behavior or actions do nor of the Ordinance on professional zed person in the legal entity in w the Ordinance on professional p cate of completed professional p nd no later than the end of the c nters "satisfied" in the Certificate Practice Diary, he enters "not sa urse in the next academic year. Pr ent or mentor informs about the e he existence of such reasons. A s he intended practice in terms of co to do the internship, submit a wri- te of the legal entity where he we | se professional practice inde er signs the Instruction for p ned under the mentorship of to him and is obliged to resp at work, work obligations, a charm the legal entity and th practice). Upon completion hich the student is doing the ractice) in his part of the ce practice to the holder of the urrent academic year. If the of Professional Practice and tisfied" in the Certificate of ofessional practice is terminal xistence or termination of the tudent may be recognized for ontent and complexity. In order the application for recognited pression has worked. The cert | pendently or at the proposal of the erforming the professional intern an authorized person. During the pect the legal regulations of the legand and safety measures. legal entity the Polytechnic. During the interns of the internship, the mentor sign internship signs and certifies the se ertificate. The student is obliged the course Professional practice im holder of the Professional Practic the index. If the holder of the Pro- Professional Practice, and the st ated in the event of justified reason the existence of the same lecturers for the Professional Practice cours her for the course to be recognized tion of the internship (Appendix tificate must contain the title of the tificate must contain the title of the title of the tificate must contain the title of the title of the title of the tificate must contain the title of the title of the title of the tificate must contain the title of the title | a legal entity that performs transport the student. In order for a student to ship (Appendix 2 of the Ordinance internship, the student is obliged to gal entity in which he performs the in which he performs professional hip, the student prepares a Diary of ns it. After successfully completing student the Certificate of completed to submit the diary of professional mediately after the completion of fice course accepts the Professional ofessional Practice course does not udent is obliged to re-enroll in the ns and continues when such reasons immediately after their occurrence e if he/she works or has worked on , the student should, in the semester 3 of the Ordinance on professional ne job, a detailed description of the con the recognition of professional | | | | | | |
|---|---|---|---|---|--|--|--|--|--|--|--|
| | - | | | | on the recognition of professional | | | | | | |
| | practice. | ······································ | r . J | | | | | | | | |
| | Attending classes | | Written exam | Project | | | | | | | |
| 3.2. Student work monitoring | Experimental work | | Research | Practical work | | | | | | | |
| (enter the share of ECTS credits | Esaay | | Report | Continuous check | | | | | | | |
| for each activity so that the total number of ECTS credits corresponds to the course credit | Otal Colloquiums Seminar paper Execution of professional | | | | | | | | | | |
| value) | Teaching activities | | The oral part of exam | Professional practice diary | 3 | | | | | | |
| 3.3. Student work-load | | on all bases amounts to 1 ECTS of arry of professional practice (90 h | | er semester and is assessed as: att | ending a Professional Practice | | | | | | |



| 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 INFORMATI | ON ABOUT COURSE | | | | | | | | | | |
| 5.1. Compulsory literature (available in the library and via | Title | Number of copies in the library | Availability via other media | | | | | | | | |
| other media) | The literature of the Undergraduate Professional Study of Traffic. | | | | | | | | | | |
| | Internet websites of the legal entity where the students completed the Professional practice. | | | | | | | | | | |
| | 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 Undergraduate Professional 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 | attendance and student activity during classes and provided information on students' progress three further guidance to students will be provided in order to increase the efficiency of their work. Stud- as well as the methods of work and the required literature. Indicators of quality assurance system | 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, an adjournment will be published in a timely manner on the e-learning site of the course and on the w during the consultation period (at least one hour per week), while for short questions and explanation to ask questions by e-mail (from the official e-mail address name@vus.hr), which will be answer after receiving the e-mail). | vebsite of the Polytech ons they can be contac | hnic. Students can contact teachers cted during class. It is also possible | | | | | | | | |



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

| 1. GENERAL INFORMATION | | | |
|--|---|---|--|
| 1.1. Course title | BATCHELOR THESIS | 1.8. Course code at ISVU | 214575 |
| 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) | - |
| 1.4. Study programme (specialist, undergraduate, graduate) | Undergraduate professional 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 nd | 1.13. Modernization | X yes \Box no |
| 1.7. Credit point (ECTS) | 10 | 1.14. Percentage estimate of course changes and/or supplements | Less than 20%XMore than 20 %□ |

| 2. COURSE DESCRIPTION | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| 2.1. Course objectives | e 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 pening the theoretical knowledge acquired through the study program at the level of the profession he acquires. Also, the aim of the course is for lents to develop the ability of an independent approach in processing and solving complex and practical problems in the profession. Students develop 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 | pur-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 Batchelor 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 werbs 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 Batchelor 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 | _ | idents 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 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 esis. | | | | | | | | | |
| | Attendance | | Written exam | 4 (| without colloquia) | Project | | | | | |
| 3.2. Monitoring student work (enter the share of ECTS credits | Experimental work | | Research | | | Practical work | | | | | |
| for each activity so that the total number of ECTS points | Essay | | Report | | | Continuous examination | | | | | |
| corresponds to the credit score of the course) | Colloquium | | Seminar paper | | | The written part of the Batchelor thesis | 7 | | | | |
| | Class activity | | Oral exam | | | Oral defense of the Batchelor thesis | 3 | | | | |
| | Student workload on a | all bases is 1 ECTS crea | dit 30 semester hours a | nd is esti | mated as: | | | | | | |
| 3.3. Student workload | Obligation | | | | Hours (estimated) | | | | | | |
| 5.5. Student workload | 1. The written | part of the Batchelor th | nesis | 210 | | | | | | | |
| | 2. Oral defense of the Batchelor thesis 90 | | | | | | | | | | |
| 4. GRADING SYSTEM | 4. GRADING SYSTEM | | | | | | | | | | |



| | Element of evaluation | Bad | | | Satisfying | | Abo | ove average | | |
|--|-----------------------------------|--|--|---|----------------|--|---|-------------|--|--|
| | Organization | The paper is not orga order and lacks struct | U | The paper is well structured with a clean distinction between the introduction the main body of the text and the conclusion. | | | The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion, which are logically interconnected. | | | |
| 4.1. Evaluation of the Batchelor thesis | Terminology, writing style | Words and expression official terminology. is not appropriate, the long, of a modest voc frequent and repea errors. | The writing sty sentences are to cabulary and with | style e too with clear the vocabulary is appropriate of | | writing style e structure is propriate and | e understanding of their meaning. The s writing style is excellent, the sentences | | | |
| | Citing and referencing references | The sources are not references do not fit th a cursory approach topic. | ne topic and sho | now and with errors. The references | | | are appropriate their list is "rich" and | | | |
| 4.2 Examples the final and | The written part of the | 2 | | 3 | | 4 | 5 | | | |
| 4.3. Forming the final grade according to the evaluation | Batchelor thesis | 5 points | 10 | oints | 15 points | | 20 points | | | |
| elements | The written part of the | 2 | | 3 | | 5 | | 5 | | |
| elements | Batchelor thesis | 5 points | 10 | oints | 15 | 5 points | | 15 points | | |
| | Percentage of acquired k | nowledge, skills and co | ompetences | Number rati | ng | ECTS grade | | | | |
| | 9 | 90 - 100% | | 5 (excellen | t) | | А | | | |
| 4.4. Formation of final grade | 8 | 0-89,9% | | 4 (very goo | d) | | В | | | |
| based on absolute distribution | 6 | 5 – 79,9% | | 3 (good) | | | С | | | |
| | 6 | 60-64,9% | | 2 (sufficien | t) | | D | | | |
| | 5 | 0-59,9% | | 2 (sufficien | 2 (sufficient) | | Е | | | |
| 5. ADDITIONAL INFORMATIO | ON ON THE SUBJECT | | | | | | | | | |
| | | Т | itle | | | | ber of copies in Availability via other the library media | | | |



| 5.1. Required literature (available | Rulebook on the Batchelor thesis Instructions for writing a seminar paper and Batchelor thesis | - | | | | | | |
|---|---|--|---|--|--|--|--|--|
| in the library and through other media) | Books and professional literature in the field of writing the Batchelor thesis | | | | | | | |
| incuta) | 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 ensu students' attendance and activity in the classroom and information obtained about student progress t needed for further guidance to students in order to increase their work efficiency. Students will be in working methods and required literature. Quality assurance system indicators: Student survey, monit status of students, employer survey and Alumni Association. | hrough the midterm will astructed in their rights a | provide the information nd obligations as well as | | | | | |
| 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 possible adjournment will be published in a timely manner on the e-learning site of the course and on the teachers during the consultation period (at least one hour per week), while for short questions and exp also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be working days after receiving the e-mail). | ne website of the Polytech planations they can be con | nic. Students can contact ntacted during class. It is | | | | | |

10. MATRIX OF LEARNING OUTCOMES OF THE STUDY PROGRAMME OF THE UNDERGRADUATE PROFESSIONAL STUDY OF TRAFFIC FOR THE ACADEMIC YEAR 2021./2022.

| LEARNING OUTCOMES (LO) | L01 | LO2 | LO3 | LO4 | LO5 | LO6 | L07 | L08 | LO9 | LO10 | L011 | LO12 | L013 |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| COURSE NAME | | | | | | | | | | | | | |
| Mathematics | | + | + | + | | + | | + | | | | | |
| Physics | | | | + | | | | + | | | | | |
| Graphic communications | | | | + | | | + | + | | | | | |
| Basics of computer science | | + | + | + | | + | + | + | | | | | |
| Knowledge of goods | + | + | + | | | + | | | | + | | | + |
| English language I | + | + | + | | | | | | | | | | |
| Modern traffic systems | + | + | + | + | | | | | | | | | |
| Basics of electrical engineering and electronics | | | | + | | | | + | | | | | |
| Traffic logistics | + | + | + | | + | + | | | + | | + | + | + |
| English language II | + | + | + | | | | | | | | | | |
| Tehnical mechanics | | | | + | | | | + | | | | | |
| Traffic and ecology | + | | + | + | | + | | | | | + | | + |
| Basics of mechanical engineering | + | | | + | | | | + | | | | | |
| Statistics in traffic | + | | | | | + | | + | | | | | |
| Internal transport and storage | + | | | | | | + | + | + | + | + | + | + |
| Logistics and supply chains | + | + | + | | + | + | | | + | | + | + | + |
| English language III | + | + | + | | | | | | | | | | |
| Traffic corridors and merchandise flows | + | + | + | | | + | | | | + | | + | |
| Traffic law | + | + | + | | + | + | | | | | | | |
| Transshipment resources | + | + | + | + | | + | | | | + | | | + |
| Theory of vehicle movement | + | | | + | | | | + | | | | | + |
| Freight-Distributional centres and terminals | + | + | + | | | + | | | | + | | | + |
| Technology and organization of public city | + | + | + | | + | + | | | + | | + | + | + |
| transport English language IV | + | + | + | | | | | | | | | | |

| Economics of traffic | | + | + | | + | | | | | | | | |
|---|----|----|----|----|---|----|---|----|---|---|----|----|----|
| Operational research in traffic | + | | | + | | | + | + | | | | | |
| Infrastructures of road traffic | + | | | + | | | + | + | | | + | + | + |
| Resources and exploitation of resources of road | + | | | + | | | | + | | | | | + |
| traffic | | | | | | | | | | | | | |
| Technology and organization of road traffic | + | + | + | + | + | + | | + | + | | + | + | + |
| Traffic techniques | + | + | + | + | | + | + | | | + | + | + | + |
| Information systems in road traffic | + | + | + | + | | + | | | | | + | | + |
| Transport geography | + | + | + | | | + | | | | + | | + | |
| Traffic in tourism | + | + | + | | | + | | | | | | | |
| Safety and protection of transport processes | + | + | + | | + | + | | | + | + | + | + | + |
| Professional practice | + | | + | + | | + | | | + | | + | + | |
| Batchelor thesis | | | | | | | | | | | | | |
| TOTAL NUMBER OF COURSES BY LEARNING OUTCOMES | 29 | 22 | 24 | 18 | 7 | 19 | 6 | 14 | 7 | 8 | 11 | 11 | 15 |

Curriculum for the Undergraduate Professional Study of Traffic at the Polytechnic of Šibenik, for the academic year 2021./2022. was adopted at the 10th session of the Traffic Department Council, which was held on Monday, September 06. 2021..

Curriculum for the Undergraduate Professional Study of the Traffic at the Polytechnic of Šibenik, for the academic year 2021./2022. was confirmed at the 33th session of the Expert Council of the Polytechnic of Šibenik, which was held on Tuesday, September 28. 2021..

Curriculum for the Undergraduate Professional Study of Traffic at the Polytechnic of Šibenik for the academic year 2021./2022. will be published on the official website of the Polytechnic of Šibenik, under the link: http://www.vus.hr/?stranice=traffic&id=167&lang=en

CLASS: 003-08/21-07/01 REGISTRY NUMBER: 2182/1-12/3-1-21-12

Šibenik, 28.09.2021.

Head of Undergraduate professional study of Traffic

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

D-j- Legs

