



Funded by
the European Union

EVENT REPORT FORM

Project title	Transport of Dangerous Goods - Modernization of Curricula and Development of Trainings for Professionals in the Western Balkans HEIs
Project acronym	DGTRANS
Project reference number	101082187/ERASMUS-EDU-2022-CBHE-STRAND-2
Coordinator	University of Mitrovica
Project start date	December 01, 2022
Project duration	36 months

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be."



University of Pristina
Kosovska Mitrovica

Transport of Dangerous Goods - Modernization of Curricula and Development
of Trainings for Professionals in the Western Balkans HEIs
Call: ERASMUS-EDU-2022-CBHE-STRAND-2



EVENT DESCRIPTION

Date	24.04.2024.
Author	Gospić Nataša, Oliver Popović, Ivana Buzdovan, Srdja Popovic
Institution	AUB, FSKL
Event title	DGTRANS Info Day for student enrolment in Podgorica
Event description:	The goal of this event is to promote the enrolment of new students to the modernized study program at the Road Traffic and Safety Module. The event is held in secondary school “Ivan Uskoković” in Podgorica. The Brochure for student’s enrolment on undergraduate studies with detailed explanations about new courses related to TDG and appropriate leaflets were created, printed and distributed to the participants. The dean of FSKL, Srđa Popović, gave an opening address to potential new students, emphasizing that the modernized program introduced courses dealing with the transportation of dangerous goods, which represents the improvement and expansion of the knowledge of future engineers. Then, prof. Dr. Milan Vujanić informed audience about the basics of traffic safety, especially traffic safety when the transport of dangerous goods is in question. MSc Ivana Buzdovan, member of DGTRANS team, had presentation related to Smart Cities and possibilities to control the traffic of DG. The high school principal Mrs. Sonja Dabetić addressed the enrolment promoters and thanked them for the useful information related to road traffic. She opened discussion. Future students were interested in the safety of the environment when transporting hazardous materials is in question. Questions were also related to tuition fees and the duration of studies. The event lasted one and half hour and 30 student-participants were present. In the attachment Attendance list is provided.

Attachment

Attendance list	YES
-----------------	-----



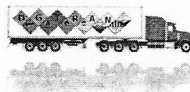
Photos
(jpg)







Brochure (EN&LL)	YES
Leaflet (EN&LL)	YES
Other materials YES	



Event	DGTRANS PROMOTION OF STUDENTS ENROLMENT
Venue	Srednja škola "Ivan Uskoković" Podgorica
Date	24. April 2024
Organizer	AUB

No.	Name	Institution acronym	E-mail	Signature	Signature for pictures & audiovisual material publication ¹
1.	Kliza Zarić	SSS "Ivan Uskoković"	klizazarić@gmail.com	Kliza Zarić	Kliza Zarić
2.	Danijel Gjelint	SSS "Ivan Uskoković"	danijel.gjelint@gmail.com	Danijel Gjelint	Danijel Gjelint
3.	Danija Đurićević	SSS "Ivan Uskoković"	danijaduricevic9@gmail.com	Danija Đurićević	Danija Đurićević
4.	Maja Janković	SSS "Ivan Uskoković"	majajankovic05@gmail.com	Maja Janković	Maja Janković
5.	Anđela Vlaović	SSS "Ivan Uskoković"	anđela.vlaovic715@gmail.com	Anđela Vlaović	Anđela Vlaović
6.	Tijana Ruković	SSS "Ivan Uskoković"	tijsanarukovic1@gmail.com	Tijana Ruković	Tijana Ruković
7.	Dino Perić	SSS "Ivan Uskoković"	dinolekic50@gmail.com	Dino Perić	Dino Perić
8.	Darjan Šulga	SSS "Ivan Uskoković"	darjan77tarja@gmail.com	Darjan Šulga	Darjan Šulga
9.	Filip Despotović	SSS "Ivan Uskoković"	filipdespotovic11@gmail.com	Filip Despotović	Filip Despotović
10.	Jovanović Danijel	SSS "IU"	Danijel.jovanovic@gmail.com	Jovanović Danijel	Jovanović Danijel
11.	RAŽNATOVIĆ VLADIMIR	SSS "IU"	Vladimir.Razmatovic1@gmail.com		
12.	Nemanja Zejak	SSS "IU"	Nemanja.Zejak@gmail.com		
13.	Šišović Nikola	SSS "IU"	Šišović.Nikola@gmail.com	NS	NS
14.	Uđić Dragi	SSS "IU"	Dragi.Udic@gmail.com		

¹ By signing this you agree to give permission to the hosts of the event to take pictures and audiovisual footage of you, during this event and publish those in public mediums such as website, social media, media outlets & printed promotional materials. The usage of the pictures shall be solely for purposes of event and topic related promotional events and initiatives.



No.	Name	Institution acronym	E-mail	Signature	Signature for pictures & audiovisual material publication ²
15.					
16.	Boukolub Mraget	SSS "IV"	-		
17.	Đorđe Mićković	SSS "IV"	Đorđe.Mićković@gmail.com	DM	DM
18.	DAPČEVIĆ Vasilija	SSS "IV"	Vasilija.Dapčević@gmail.com	VD	VD
19.	Miloš Konatar	SSS "IV"	Miloš.Konatar@gmail.com	MK	MK
20.	Dino Čarović	SSS "IV"	ČarovićDino1@gmail.com	DC	DC
21.	Hasilović Vasilije	SSS "IV"	VasilijeH6@gmail.com	VH	VH
22.	Testić Nikola	SSS "IV"	NikolaTestić16@gmail.com	NT	NT
23.	Čosović Ognjen	SSS "IV"	ČosovićOgnjen6@gmail.com	OE	OE
24.	Katarina Rajković	SSS "Ivan Ustoković"	Katarina.Rajković@gmail.com		
25.	Ćuć Milena	SSS "IV"	MilenaĆuć16@gmail.com		
26.	Mija Žuković	SSS "Ivan Ustoković"	mijažuković@gmail.com	Mija Žuković	Mija Žuković
27.	Marija Vulević	SSS "Ivan Ustoković"	-	Marija Vulević	Marija Vulević
28.	Đaua Radošević	SSS "Ivan Ustoković"	-	Đaua Radošević	Đaua Radošević
29.	Milena Spaić	SSS "Ivan Ustoković"	-	Milena Spaić	M.S.
30.	Ivana Burdovan	AUB	ivanaburdovan@yahoo.com		
31.	SRĐA POPOVIĆ	AUB	srđapopovic@gmail.com		
32.	МИЛАН ВУЈАНУК	AUB	-		
33.					
34.					
35.					
36.					

² By signing this you agree to give permission to the hosts of the event to take pictures and audiovisual footage of you, during this event and publish those in public mediums such as website, social media, media outlets & printed promotional materials. The usage of the pictures shall be solely for purposes of event and topic related promotional events and initiatives.



Funded by
the European Union

BROCHURE

FOR THE PROMOTION OF CURRICULA OF BASIC STUDIES IN THE FIELD OF TRANSPORT OF DANGEROUS GOODS

***UNIVERSITY ADRIATIK BAR, FACULTY OF TRANSPORT,
COMMUNICATIONS AND LOGISTICS, BUDVA***



"Funded by the European Union. The views expressed and opinions expressed are, however, of the authors themselves and do not necessarily reflect the views of the European Union. Neither the European Union nor the authority that grants the approval can be."



University of Pristina
Kosovska Mitrovica

Transport of Dangerous Goods - Modernization of Curricula and Development
of Trainings for Professionals in the Western Balkans HEIs
Call: ERASMUS-EDU-2022-CBHE-STRAND-2

**PROJECT INFORMATION**

Project name	Transport of dangerous goods - Modernization of curricula and development of trainings for professionals in the Western Balkans
Akronim project	DGTRANS
Project reference number	101082187/ERASMUS-EDU-2022-CBHE-STRAND-2
Funding scheme	Capacity building in the field of higher education: Strand 2
Web address	W.Dictron.PRACRS
Coordination institution	University of Prishtina in Kosovska Mitrovica
Project duration	01 December 2022 – 30 November 2025

DOCUMENT CHECKLIST

Work package	WP3: Development of dg and lab curricula
Ref. no. And the name of the activity.	7.3. Promotional material for student enrolment
Shipment Title	BROCHURE FOR THE PROMOTION OF CURRICULA IN THE FIELD OF TRANSPORT OF DANGEROUS GOODS
Leading institution	The University of Óbuda (OE)
Author(s)	Nataša Gospić, Dragutin Jovanović, Oliver Popović, Ivana Buzdovan, Predrag Stanojević, Darijana, Lopičić
Document Status	Final
Document version and date	V01, 18.04.2024
Level of dissemination	Public

HISTORY OF VERSIONING AND CONTRIBUTIONS

Version	Date	Audit description	Partner responsible
v.01	18.04.2024.		
v.02	23.04.2024		



Content

ABOUT BROSHURE

1. INTRODUCTION.....	4
1.1. Higher education institution - University of Adriatic, Bar-AUB, Faculty of Transport, Communications and Logistics, Budva.....	4
1.2. Learning program	4
1.3 Improvement of the study programme of basic studies of the Road Transport and Safety Module	5
- 1.4 Competences.....	7
1.5 Quality, modernity and principles	8
2. CONTENTS OF MODERNIZED SUBJECTS AND WORK PROGRAM	9
2.1 Organization of transport enterprises	9
2.2 Organization of transport of dangerous goods in road traffic	12
2.3. Storage systems	15
2.4. Intermodal transport	17
2.5 Regulations in road transport	18
2.6 Logistics of dangerous goods.....	20
3. CURRICULUM OF STUDY PROGRAMME OF UNDERGRADUATE STUDIES MODULES “ROAD TRAFFIC AND SAFETY” AND “LOGISTIC”	22



ABOUT THE BROCHURE

The brochure was created as a promotional material that should provide the necessary information on the transport of dangerous goods and the study program of basic studies entitled "Traffic, Communications and Logistics" (module "Road Traffic and Safety" and module "Logistics") and which is improved with contents dealing with the transport of dangerous goods at the University Of Adriatic Bar, Faculty of Transport, Communications and Logistics in Budva. The aim of the Brochure is to show future students of the undergraduate studies of the Module "Road Traffic and Safety" and the Logistics Module how new trends in the development of the transport sector for the transport of dangerous goods are followed through studying and what competencies are acquired from this field. This was done through the modernization of existing cases in two modules, namely "Road Traffic and Safety" and "Logistics".

The Faculty of Transport and Logistics is a partner in the ERASMUS+ project DGTRANS (<https://dgtrans.pr.ac.rs/>) which deals with the transport of dangerous goods. The objectives of the DGTRANS project are reflected through the changes made at the basic studies as well as activities for improving the transport of dangerous goods.

The brochure is also intended for all other participants, especially citizens, decision-makers at the local and national level, and the private sector.

Autors of the Brochure
Prof. Emeritus dr Natasa Gospic
Prof. dr Dragutin Jovanovic
Prof.dr Snezana Tadic
Docent dr Oliver Popovic
Prof. dr Predrag Stanojevic



1. INTRODUCTION

1.1. Higher education institution - University of Adriatic, Bar-AUB, Faculty of Transport, Communications and Logistics, Budva

The Faculty of Transport, Communications and Logistics, Budva (FSKL) was founded in 2008 in Berane, Montenegro, and now has its headquarters in Budva, Montenegro. In 2017, FSKL signed an Association Agreement with The University of Adriatic Bar (AUB), changing its name to Adriatic University, Bar - Faculty of Transport, Communications and Logistics, Budva-FSKL.

The Faculty is accredited and licensed for the 3+2 study program "Traffic, Communications and Logistics" and is accredited and licensed for doctoral studies in Traffic Engineering.

For Montenegro, as an ecological state with strategic directions of development "tourism and eco-economy", traffic is determined as a basic factor in the realization of these strategic directions. The evident lack of professionals in the field of transport, communications and logistics defined the mission of the Faculty as "education of engineers (bachelor, master, doctor) in the field of railway, road, air and postal transport, communications and logistics, based on modern knowledge (theory and practice), which will enable them to develop the transport system of Montenegro and efficiently include it in the European and world transport system".

1.2. Study program

The master study programme is entitled "Traffic, Communications and Logistics". Within this study program, on basic study modules were formed: Road Transport and Safety, Postal Transport, Air Transport, Railway Transport, Electronic Communications, Logistics. The study program is based on the latest scientific knowledge and practice and enables the education of engineers who will be trained to plan, design, manage and control processes and systems in various areas of transport, communications and logistics. In doing so, special attention is paid to the fact that engineers acquire applied



knowledge and skills that will be a good basis for practical work that allows them to successfully engage in the field of transport, communications and logistics companies or to continue their education at doctoral studies.

In the realization of the Study Program, modern literature is used and engages leading teaching staff in the field of transport, communication and logistics from the country and the region, with the aim of continuous improvement of the curricula of each of the Modules. The very look at the above scientific disciplines indicates that at FSKL, future engineers receive a wide range of general and specialized knowledge, which comprehensively educates them as professionals in the field of road traffic and safety.

1.3 Improvement of the study programme of basic studies of the Road Transport and Safety Module

Hazardous substances (DGs) are materials that, due to their characteristics, can pose a risk to humans, animals or the environment. DG's involvement in an accident can lead to fires, explosions and toxic gas releases, producing serious consequences for human health and the environment. In order to minimize risks, the transport of dangerous goods (TDGs) in Europe is subject to various regulations with a constantly growing need for educated and professional staff.

The **ERASMUS+ Project DGTRANS**, in which on behalf of the University Adriatic Bar – AUB Facultet for traffic, communication and logistic, Budva -FSKL is a partner, has set the main objectives such as:

- Identify key risks of transport of dangerous goods (TDGs) by road in partner countries of the Western Balkans - WB in accordance with the regulations.

- Improve existing and develop new curricula of undergraduate and master studies, which are taught by TDG, in accordance with the requirements of the Bologna Declaration and national accreditation standards. These cases should also include provisions concerning dangerous goods and provisions relating to transport equipment and transport operations.

- Establishment of training centers within the higher education institution (HEI).

The most important results of the project will be the modernization of the existing curricula in the part related to TDG and handling, as well as that the curriculum should



increase awareness of the dangers that may arise from improper transport and handling of dangerous goods.

Hazardous substances (DGs), which by their characteristics carry serious risks to the health and lives of people and the environment, pose challenges in all modes of transport and warehouses in appropriate logistics centers. These aspects are not sufficiently represented in the existing Undergraduate Study Programme, and the need for personnel with this specialization is greater every day.

After completing the analysis of the existing contents of the “Road Transport and Safety” Module, it was concluded that it is necessary to introduce aspects of transport and storage of DG in certain subjects at the basic studies through the modernization of the content of the courses, bearing in mind the objectives of the ERASMUS+ Project DGTRANS. In this sense, the Council of the Faculty of Transport, Communications and Logistics has decided to modernize 6 courses from two modules the “Road Transport and Safety” Module and the “Logistic” Module, which are presented in Table 1.

Table 1. Overview of the modernized courses of the Basic Studies of the Road Transport and Safety Module and the Logistics Module

	NOMENCLATURE	S	STATUS	HOURS			ECTS	Module
				P	V	Dt		
SECOND/THIRD YEAR								
IP1.	ORGANIZATION OF TRANSPORT COMPANIES	3	M	3	2	-	6	Road Traffic
IP2.	ORGANIZATION OF TRANSPORT OF DANGEROUS GOODS IN ROAD TRAFFIC	5	M	2	2	-	5	Road Traffic
IP3.	STORAGE SYSTEMS	5	M	2	2	-	5	Logistics
IP4.	INTERMODAL TRANSPORT	5	M	2	2		5	Common for both Modules
IP5.	ROAD TRAFFIC REGULATIONS	6	E	2	2	-	5	Road traffic.
IP6.	LOGISTICS OF DANGEROUS GOODS	6	E	2	2	-	5	Logistic
Total ECTS=							31	
LEGEND S-semester; M-obligatory, E-electiveP-lectures; V-exercises; Dt.=other types of lectures; ECTS = number of credits;								



- 1.4 Competences

The competence requirements of professionals working in the dangerous goods transport (TDG) sector are very broad. Skills for integral management of the transport of dangerous goods, technical knowledge for dealing with TDG and its storage, managing everyday problems, challenges and risks, as well as fundamental knowledge of hazardous substances are important elements in the catalogue of competencies of professionals and their further development in the TDG sector. Also, so-called "soft" skills are required, including appropriate manners during communication and presentation, as well as experience in project management. The development of the Catalogue of Competences and Courses defines an integral approach and multidisciplinary as a prerequisite for the development of professionalism in the field of TDG.

Competencies acquired by improving the Study Programme of the "Road Transport and Safety" and "Logistic" Modules through defined subjects from Table 1 are presented in Table 2.

Table 2 *Competences of modernized subjects*

Competences		Compulsory MS/Elective courses ES					
		IP1	IP2	IP3	IP4	IP5	IP6
Generic competencies	Capacity for analysis and synthesis	X	X	X	X	X	X
	Capacity to apply knowledge in practice	X	X	X	X	X	X
	Oral and written competencies	X	X	X	X	X	X
	Development of computer competences	X	X	X			X
	Development of research skills	X	X	X	X	X	X
	Information skills management	X	X	X			X
	Critical and self-critical skills	X	X	X	X	X	X
	Ability to adapt to new situations	X	X	X	X	X	X
	Capacity to generate new ideas (creativity)	X	X	X	X	X	X
	Troubleshooting	X	X	X	X	X	X
	Teamwork	X	X	X	X	X	X
	Leadership	X	X		X		X
	Ability to work in a multidisciplinary team	X	X	X	X	X	X
	Ability to communicate with people in the field	X		X			X
	Initiative and entrepreneurial spirit	X	X				X



	Integrity and ethical commitment	X	X	X	X	X	X
	Decision making	X	X	X		X	X
	Synthesis of information to determine the perspective of a problem or trend in tdg security	X	X			X	X
	Holistic and proactive approach	X	X	X	X	X	X
	TDG Difference Recognition	X	X	X	X	X	X
	Awareness of workload and limitations	X	X	X	X	X	X
	Awareness of professional responsibility	X	X	X	X	X	X
Subject specific competencies	Awareness of the importance of TDG security for the development of society	X	X	X	X	X	X
	Understanding the principles of the TDG security system and defining activities as their response	X	X	X	X	X	X
	Creation of new technological solutions and improvements that improve transport processes in dangerous goods flows		X		X	X	
	Understanding the relationship between TDG activities and the public	X				X	X
	Understanding the role of regulatory authorities for TDG	X	X		X		
	Understanding the importance of TDG on roads for sustainable development	X	X		X	X	
	Recognizing TDG security management as a key sustainability factor	X	X		X	X	
	Ability to participate in all stages of planning, organization of logistics operations in city logistics.			X			X
	Ability to apply theoretical and practical knowledge in the execution of logistics operations in city logistics			X			X

1.5 Quality, modernity, and principles

The study programme of the “Road Transport and Safety” Module and the “Logistic” Module is in accordance with European trends and the status of profession and science in the relevant educational and scientific field and is comparable to similar programs in foreign and higher education institutions. Harmonization of the improved study program for TDG student acquires knowledge, skills and abilities that enable the realization of competencies and learning outcomes that are required in TDG. The study programme is aligned with the objectives of the ERASMUS+ Project DGTRANS. Also, the principles from the Accreditation/Re-accreditation of the Study Program for the period 2020-2025 were applied that each course/subject lasts one semester, has a credit system, elective courses and does not require new accreditation, what is the case for modernized courses from Table 1.



2. CONTENTS OF MODERNIZED COURSES AND WORK PROGRAM

Below are the information list of modernized subjects at the basic studies of the “Road Traffic and Safety” Module and the “Logistics” Module, in the form required by the Agency for Quality Control of Higher Education, Montenegro. The lists emphasize the changed parts and the work program by weeks with the introduction of the TDG aspect. The modernized courses were confirmed by the Decision of the Council of the Faculty 4.09.2023. In the text below in details are presented syllabuses for modernized courses.

2.1 Organization of transport enterprises

<i>Name of subject:</i> Organization of transport companies				
<i>Subject Code</i>	<i>Case Status</i>	<i>Semestar</i>	<i>Number of ECTS credits</i>	<i>Time's worth of time</i>
	Required	OR	6	60

<i>The study programmes for which it is organized:</i> At the Faculty of Transport, Communications and Logistics, the study program of undergraduate academic studies lasts for three years (VI semesters) of 180 ECTS.
<i>Conditionality of other subjects:</i> No conditions for applying and listening to the subject
<i>Objectives of studying the subject:</i> Acquisition of the latest knowledge from the organization, introduction and mastering of modern methods and techniques relevant for the organization and their application in the business of transport and communication companies. Through the knowledge of future professionals will be ready to cope with the challenges of the modern business environment and ensure the safe and efficient transport of various types of cargo, including hazardous substances.
<i>Learning Outcomes:</i> <i>Upon completion of the study, the student will be able to:</i> It identifies the underlying problems and looks at the relevant factors for decision-making in the organization of the company. • It analyzes business challenges and identifies key factors for successful business decision-making. • It applies the concepts of strategic planning and change management in the organization. • Apply models related to the organization of the company. • Understands the different models of organizational structure and their advantages. • It analyzes processes within the company to optimize efficiency and productivity. • Applies appropriate models in the reorganization of the enterprise and the organization of business functions. • It identifies the need for reorganization and proposes models for better allocation of resources and responsibilities. • Plans and implements changes in the organization with minimal disruption to business. • Identify the most favorable methods/models for designing the organization. • It analyzes the specific requirements of the organization and selects optimal models for designing and harmonizing business processes. • Determine the steps for control and security measures in the organization of cargo transport, especially in the transport of dangerous goods.



• He understands the principles of risk management and applies them to the planning and organization of freight transport. • It identifies hazardous substances and adheres to legislation and regulations relating to their transportation. • Implements safety protocols and measures to ensure the safe transport of dangerous goods. • Understand the concepts of safety in the transport of dangerous goods. • It recognizes potential hazards and risks in the transport of dangerous goods. • It applies methods to minimize risk, including proper packaging, labelling and manipulation of hazardous substances.		
Name and surname of the teacher and associate: Prof.dr Dijana Medenica-Mitrović		
Method of teaching and mastering the material: Theoretical lectures, practical examples, interactive work.		
Content of the subject:		
Preparatory Sundays		
I	Sunday	Concept and development of the organization - Introduction to the basics of the organization and its importance in the business environment. - The development of organizations throughout history influences technological change.
II	Sunday	Types of organizational structure - Analysis of different types of organizational structure: functional, matrix, mesh, divisional, etc. - Advantages and disadvantages of each type of structure.
III	Sunday	Organizational models of the company - An overview of traditional and modern organizational models. - Application of flexible models in modern organizations.
IV	Sunday	Organizing large business systems - Managing complex organizational structures. - Coordination between different sectors in large business systems.
V	Sunday	Modern models of transport enterprises in developed countries of the market economy - Analysis of transport enterprise models with an emphasis on innovation and efficiency. - Adapting the transport of hazardous goods within these models.
YOU	Sunday	Business and development policy - Influence business policies on organizational decisions and strategies. - Development policies aimed at improving the transport of dangerous goods.
VII	Sunday	Creating a business plan - Steps in developing a detailed business plan for the transport of all types of cargo including the transport of dangerous goods. - Analysis of markets, competition, costs and potential risks.
VIII	Sunday	Organizaciona kultura - Understanding the importance of organizational culture in achieving goals. - Creating safety awareness and culture in the context of transport of dangerous goods.
IX	Sunday	And the colloquium
X	Sunday	Organization of business functions - Management of key business functions such as procurement, logistics, sales. - The specifics of the organization of these functions in the transport of dangerous goods.
XI	Sunday	Business information system - The role of information systems in the organization of transport special attention to the transport of dangerous goods. - Application of technology for monitoring, management and safety of transport.
XII	Sunday	Organization of control and security - Implementation of safety standards and protocols in the organization of transport charges especially on the transport of dangerous goods. - Risk management, planning of safety measures and procedures in emergency situations.
XIII	Sunday	Organization and management of investments and projects - Strategies for efficient investment in infrastructure - Project management to improve transport safety and efficiency.
XIV	Sunday	



XV Sunday Final Sunday XVII – XX Sunday	Designing the organization - Detailed analysis of the design of the organization in the context of transport charges a special review of the transport of dangerous goods. - Adapting structures and processes to ensure safety and efficiency. II colloquium Final exam. Semester certification and grade admission. - Final evaluation of the acquired knowledge and skills in the subject. Supplementary classes and remedial examperiod - Additional support for students who require additional training or have a need for a makeup exam.
STUDENT LOAD	
Sunday 6 credits X 40/30 = 8 hours Structure: - 2 hours of lectures - 2 hours of exercise - 4 hours to work and work on your own.	In the semester Classes and final exam: 8 hours x 16 = 128 hours Necessary preparations: before the start of the semester (administration, enrollment, certification) 2 x 8 hours = 16 hours Total load for object 6 x 30 = 180 hours Supplementary work: for the preparation of the exam in the makeup exam period, including taking the makeup exam 36 hours Load structure: 128 hours (Teaching) + 16 hours (Preparation) + 36 hours (Supplementary work)
Students are required to attend classes and exercises, do and teach all homework and do both colloquiums	
Literature [a] Vešović V.,: Organization of Transport Companies, FSKL, 2014. [b] Petković M.et al.: Organization, Faculty of Economics, Belgrade, 2006. [c] Jovanović, D. I group of authors: Transport of dangerous goods, University Of Novi Sad Academy of Business, Faculty of Economics and Engineering Management, Novi Sad, 2023.	
Forms of knowledge testing and grading: 5 points attendance, 25 points (seminar and homework), 2 colloquiums (2x20), 30 points oral exam	
Special indication for the case	
Name and surname of the teacher who prepared the data: Prof.dr Dijana Medenica-Mitrović	
Note:	



2.2 Organization of transport of dangerous goods in road traffic

<i>Name of subject:</i> Organization of transport of dangerous goods in road traffic				
<i>Subject Code</i>	<i>Case Status</i>	<i>Semestar</i>	<i>Number of ECTS credits</i>	<i>Time's worth of time</i>
	Required	V	5	60



<i>The study programmes for which it is organized:</i>																																			
At the Faculty of Transport, Communications and Logistics, the study program of undergraduate academic studies lasts for years (VI semesters) of 180 ECTS.																																			
Infiltration of other subjects has: Intermodal transport II																																			
Course objectives: The aim of studying the course is to familiarize the student with: the basic characteristics of dangerous goods, the latest requirements of ratified international agreements and national regulations applied in the course of logistics of dangerous goods in all forms and branches of transport, the basic principles of organizing and implementing the activities of the process of transport of dangerous goods as well as the framework of preventive treatment for the safe conduct of the operation of dangerous goods. the transport process.																																			
Upon completion of the course, students will be able to:																																			
- Identify dangerous goods and transport requirements; They plan the realization of certain activities of the process of transporting dangerous goods; Recognize the basic problems of using adequate packaging and vehicles, Provide adequate documentation for the transport of dangerous goods - Identify needs and design preventive measures during the logistics of transporting dangerous goods; - Apply the methodology of risk assessment and accident management; They plan to carry out control of certain activities of the process of transporting dangerous goods; Apply appropriate corrective measures to safely transport dangerous goods. They plan and implement algorithms for the selection of locations and ways of storing dangerous goods, etc.																																			
Name and surname of the teacher and associate: Prof. dr Dragutin Jovanović, Mr. Desanka Vlačić																																			
Method of teaching and mastering the material: Theoretical lectures, practical examples, interactive work.																																			
Content of the subject:																																			
<table><tr><td colspan="2">Preparatory Sundays</td><td rowspan="16"> Dangerous goods, dangerous goods, division of dangerous substances into classes - The actuality of dangerous goods logistics, general and specific requirements for transport. Classification of dangerous goods, basic hazards in dangerous goods and preventive measures adapted to hazards. International agreements and conventions for the transport of dangerous goods Hazard labelling, conduct of persons responsible for the transport of dangerous goods Operation of equipment and devices on means of transport. - Problems of mixed cargo on a means of transport or container. - Preventive measures when loading-unloading dangerous goods. Insurance of cargo, persons and other property. - Specifics and basic characteristics of transport in different modes of traffic and Optimization of stacking, packing, fastening and handling of dangerous goods. - Colloquium 1 Participants in the process of transporting dangerous goods, obligations and training - Conditions of transport of hazardous waste and environmental protection. Transport of dangerous goods with high potential danger Packaging for the transport of dangerous goods and Vehicles for the transport of dangerous goods Documents for the transport of dangerous goods and Accident procedure during the activities of dangerous goods logistics. - Defining and methodology of risk assessment during hazardous goods logistics activities. - Problems of routing and deployment of vehicles in the transport of dangerous goods, criteria, procedures and algorithms. - Selection of storage location, safety procedures and training as a form of preventive action. - Colloquium 2 - Final exam </td></tr><tr><td>And</td><td>Sunday</td></tr><tr><td>II</td><td>Sunday</td></tr><tr><td>OR</td><td>Sunday</td></tr><tr><td>IV</td><td>Sunday</td></tr><tr><td>V</td><td>Sunday</td></tr><tr><td>YOU</td><td>Sunday</td></tr><tr><td>VII</td><td>Sunday</td></tr><tr><td>VIII</td><td>Sunday</td></tr><tr><td>IX</td><td>Sunday</td></tr><tr><td>X</td><td>Sunday</td></tr><tr><td>XI</td><td>Sunday</td></tr><tr><td>XII</td><td>Sunday</td></tr><tr><td>XIII</td><td>Sunday</td></tr><tr><td>XIV</td><td>Sunday</td></tr><tr><td>XV</td><td>Weeks</td></tr></table>			Preparatory Sundays		Dangerous goods, dangerous goods, division of dangerous substances into classes - The actuality of dangerous goods logistics, general and specific requirements for transport. Classification of dangerous goods, basic hazards in dangerous goods and preventive measures adapted to hazards. International agreements and conventions for the transport of dangerous goods Hazard labelling, conduct of persons responsible for the transport of dangerous goods Operation of equipment and devices on means of transport. - Problems of mixed cargo on a means of transport or container. - Preventive measures when loading-unloading dangerous goods. Insurance of cargo, persons and other property. - Specifics and basic characteristics of transport in different modes of traffic and Optimization of stacking, packing, fastening and handling of dangerous goods. - Colloquium 1 Participants in the process of transporting dangerous goods, obligations and training - Conditions of transport of hazardous waste and environmental protection. Transport of dangerous goods with high potential danger Packaging for the transport of dangerous goods and Vehicles for the transport of dangerous goods Documents for the transport of dangerous goods and Accident procedure during the activities of dangerous goods logistics. - Defining and methodology of risk assessment during hazardous goods logistics activities. - Problems of routing and deployment of vehicles in the transport of dangerous goods, criteria, procedures and algorithms. - Selection of storage location, safety procedures and training as a form of preventive action. - Colloquium 2 - Final exam	And	Sunday	II	Sunday	OR	Sunday	IV	Sunday	V	Sunday	YOU	Sunday	VII	Sunday	VIII	Sunday	IX	Sunday	X	Sunday	XI	Sunday	XII	Sunday	XIII	Sunday	XIV	Sunday	XV	Weeks
Preparatory Sundays		Dangerous goods, dangerous goods, division of dangerous substances into classes - The actuality of dangerous goods logistics, general and specific requirements for transport. Classification of dangerous goods, basic hazards in dangerous goods and preventive measures adapted to hazards. International agreements and conventions for the transport of dangerous goods Hazard labelling, conduct of persons responsible for the transport of dangerous goods Operation of equipment and devices on means of transport. - Problems of mixed cargo on a means of transport or container. - Preventive measures when loading-unloading dangerous goods. Insurance of cargo, persons and other property. - Specifics and basic characteristics of transport in different modes of traffic and Optimization of stacking, packing, fastening and handling of dangerous goods. - Colloquium 1 Participants in the process of transporting dangerous goods, obligations and training - Conditions of transport of hazardous waste and environmental protection. Transport of dangerous goods with high potential danger Packaging for the transport of dangerous goods and Vehicles for the transport of dangerous goods Documents for the transport of dangerous goods and Accident procedure during the activities of dangerous goods logistics. - Defining and methodology of risk assessment during hazardous goods logistics activities. - Problems of routing and deployment of vehicles in the transport of dangerous goods, criteria, procedures and algorithms. - Selection of storage location, safety procedures and training as a form of preventive action. - Colloquium 2 - Final exam																																	
And	Sunday																																		
II	Sunday																																		
OR	Sunday																																		
IV	Sunday																																		
V	Sunday																																		
YOU	Sunday																																		
VII	Sunday																																		
VIII	Sunday																																		
IX	Sunday																																		
X	Sunday																																		
XI	Sunday																																		
XII	Sunday																																		
XIII	Sunday																																		
XIV	Sunday																																		
XV	Weeks																																		
STUDENT LOAD																																			
Sunday		In the semester																																	



5 credits X 40/30 = 6.6 hours Structure: - 2 hours of lectures - 2 hours of exercise - 2 hours for consultation and self-employment	Teaching and final exam: 6.6 hours x 16 = 105.6 hours Necessary preparations: before the start of the semester (administration, enrollment, certification) 2 x 6.6 hours = 13.2 hours Total load for the subject 5 x 30 = 150 hours Supplementary work: for the preparation of the exam in the makeup exam, including passing the makeup exam 31.2 hours Load structure: 105,6 hours (Teaching) + 13,2 hours (Preparation) + 31,2 hours (Supplementary work)
Students are required to attend classes	
Literature: 1. ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road 2. RID - Regulation on international rail transport of dangerous goods on international carriage of dangerous goods by rail 3. IMDG – CODE – Rules for international transport and shipping of dangerous goods by sea 4. ICAO – TI – Technical instructions for the safe transport of dangerous goods in air transport 5. IATA – DGR – Rules for Dangerous Cargo by the International Air Transport Association. 6. Jovanović, D. and Petrović, LJ.: Logistics of waste materials and returns, textbook in preparation for 2011, Faculty of Transport and Communications Management – Berane, Berane, 2011. 7. Jovanović, D. I group of authors: Transport of dangerous goods, University Of Novi Sad Academy of Business, Faculty of Economics and Engineering Management, Novi Sad, 2023.	
Forms of knowledge testing and assessment: 5 points attendance, 25 points (seminar and homework), 2 colloquiums (2x20), 30 points written exam	
Special indication for the case	
Name and surname of the teacher who prepared the data: Prof. dr Dragutin Jovanović	
Note:	



2.3. Storage systems

The study programmes for which it is organized: At the Faculty of Transport, Communications and Logistics, the undergraduate academic study program lasts for three years (VI semesters) of 180 ECTS.		
Conditionality of other subjects: No conditions for applying and listening to the subject		
Objectives of studying the subject: Getting to know the location, role and function of warehouses in logistics systems, different types and types of warehouse facilities, their characteristics depending on the type of goods they are intended for. In addition, students will be introduced to the methods, models and techniques of location selection, warehouse systems management and inventory optimization.		
Upon completion of the course, the student will be able to: - Determine the location and role of the facility in the logistics system; - Choose and apply the corresponding theoretical model of evil societies in specific problems; - Determine the optimum location of the facility using appropriate location models; - Defines the basic structure of supply subsystems and characteristic processes, especially in logistics systems for dangerous goods; - Selectthe appropriate type of security facility for the placed authoritative requirements, especially for dangerous goods; - Becomes relevant requirements for the safety of the realization of processes in the warehouse of dangerous goods; - Manages processes in the storage system.		
Name and surname of teachers and associates: Prof. dr Slobodan Zečević, Prof.dr Snežana Tadić		
Method of teaching and mastering the material: Theoretical lectures, practical examples, interactive work..		
Content of the subject:		
Preparatory Sundays		
And	Sunday	
II	Sunday	- The location, role and function of the facility in the characteristic logistics processes.
III	Sunday	- Basic subsystems of warehouses and processes in it, with special emphasis on warehouses of dangerous goods.
IV	Sunday	- The problem of defining the number and location of the location in the wider logistics system.
V	Sunday	- Typical location models and conditions for their application.
YOU	Sunday	- Zalihe, classification, management strategies and typical models for inventory optimization.
VII	Sunday	- Characteristics of goods (especially dangerous) that define the relevant characteristics of processes in the warehouse.
VIII	Sunday	- Types of packing and distribution units.
IX	Sunday	- I Colloquium
X	Sunday	- Processes of receiving, storing, storing and shipping goods in warehouse systems;
XI	Sunday	- Overview of karacteristic typesa sklafrash jekata by type of edge;
XII	Sunday	- Analysis of military connections between sklads and scaling objects with the environment;
XIII	Sunday	- Conformity of opaque materials and basic prerequisites for safe implementation of cleaning processes;
XIV	Sunday	- Application of information technology in storage systems;
XV	Weeks	- II Colloquium - Defense of seminar work;
		- Final exam.
XVII - XX Sunday		- Supplementary classes and remedial examperiod
STUDENT LOAD		



<u>Sunday</u> 5 credits X 40/30 = 6.6 hours Structure: - 2 hours of lectures - 2 hours of exercise - 2 hours for consultation and self-employment	<u>In the semester</u> Teaching and final exam: 6.6 hours x 16 = <u>105.6 hours</u> Necessary preparations: before the beginning of the semester (administration, enrollment, certification) 2 x 6.6 hours = <u>13.2 hours</u> Total load for object 5 x 30 = <u>150 hours</u> Supplementary work: for the preparation of the exam in the makeup exam period, including passing the makeup exam <u>31.2 hours</u> Load structure: 105,6 hours (Teaching) + 13,2 hours (Preparation) + 31,2 hours (Supplementary work)
Students are required to attend classes	
<i>Literature:</i> 1. Slobodan Vukicevic, <i>Skladišta</i>, Preving, Belgrade, 1995 2. Milan Sretenović, <i>Mechanization of Transfiguration</i>, University of Belgrade, Belgrade, 1996; 3. Edward Frazelle: <i>World-Class Warehousing and material handling</i>, McGraw-Hill, 2001. 4. Sunderesh Heragu, <i>Facilities Design</i>, PWS Publishing Company, Boston, 2006.	
<i>Forms of knowledge testing and grading:</i> 5 points attendance, 25 points (seminar and homework), 2 colloquiums (2x20), 30 points oral exam	
<i>Special indication for the case</i>	
<i>Name and surname of the teacher who prepared the data:</i> Prof. dr Slobodan Zečević, Prof. Dr Snežana Tadić	
<i>Note:</i>	



2.4. Intermodal transport

Name of subject: Intermodal Transport																																																										
Subject Code	Case Status	Semestar	Number of ECTS credits	Time's worth of time																																																						
	Required	V	5	60																																																						
The study programmes for which it is organized: At the Faculty of Transport, Communications and Logistics, the undergraduate academic study program lasts for three years (VI semesters) of 180 ECTS.																																																										
Conditionality of other subjects: There are no conditions for reporting and listening to other subjects.																																																										
Course objectives: Introduction to the basic concepts, structure of the intermodal transport (IT) system, methodology of planning, management, control and analysis of processes in intermodal transport chains and systems, with special emphasis on the flows of dangerous goods.																																																										
Upon completion of the course, the student will be able to: - Identify and quantify intermodal transport requirements; - Defines segments of the intermodal transport market in terms of flows, technologies, users, operators, etc. - Defines the structure of the system and the requirements of each element in the intermodal chain of dangerous goods; - Choose the best technology in the realization of transport chains, with special emphasis on the chains of dangerous goods; - Evaluate the performance of the intermodal transport chain.																																																										
Name and surname of teachers and associates: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević																																																										
Method of teaching and mastering the material: Theoretical lectures, practical examples, interactive work..																																																										
Content of the subject:																																																										
<table><tr><td colspan="2">Preparatory Sundays</td><td></td></tr><tr><td>And</td><td>Sunday</td><td>- intermodal transport system.</td></tr><tr><td>II</td><td>Sunday</td><td>- Cargo manipulative units.</td></tr><tr><td>III</td><td>Sunday</td><td>- Packing and consolidation of units in the transport chain.</td></tr><tr><td>IV</td><td>Sunday</td><td>- Means of transport in intermodal transport.</td></tr><tr><td>V</td><td>Sunday</td><td>- Standardization and codification in intermodal transport.</td></tr><tr><td>YOU</td><td>Sunday</td><td>- Manipulative units and means of transport in intermodal chains of dangerous goods.</td></tr><tr><td>VII</td><td>Sunday</td><td>- Intermodal transport terminals.</td></tr><tr><td>VIII</td><td>Sunday</td><td>- I Colloquium</td></tr><tr><td>VIII</td><td>Sunday</td><td>- Transport and transport infrastructure, operators and telematics systems in IT.</td></tr><tr><td>IX</td><td>Sunday</td><td>- Basic technologies of intermodal transport.</td></tr><tr><td>X</td><td>Sunday</td><td>- Container terminals and technological operations within them.</td></tr><tr><td>XI</td><td>Sunday</td><td>- Methodology of optimization of intermodal transport chains, specific requirements in chains of dangerous goods.</td></tr><tr><td>XII</td><td>Sunday</td><td>- regulations, conventions of the international association and the policy of intermodal transport.</td></tr><tr><td>XIII</td><td>Sunday</td><td>- II Colloquium - Defense of seminar work</td></tr><tr><td>XIV</td><td>Sunday</td><td>- Final exam.</td></tr><tr><td>XV</td><td>Weeks</td><td></td></tr><tr><td colspan="2">XVII – XX Sunday</td><td>Supplementary classes and remedial examperiod</td></tr></table>					Preparatory Sundays			And	Sunday	- intermodal transport system.	II	Sunday	- Cargo manipulative units.	III	Sunday	- Packing and consolidation of units in the transport chain.	IV	Sunday	- Means of transport in intermodal transport.	V	Sunday	- Standardization and codification in intermodal transport.	YOU	Sunday	- Manipulative units and means of transport in intermodal chains of dangerous goods.	VII	Sunday	- Intermodal transport terminals.	VIII	Sunday	- I Colloquium	VIII	Sunday	- Transport and transport infrastructure, operators and telematics systems in IT.	IX	Sunday	- Basic technologies of intermodal transport.	X	Sunday	- Container terminals and technological operations within them.	XI	Sunday	- Methodology of optimization of intermodal transport chains, specific requirements in chains of dangerous goods.	XII	Sunday	- regulations, conventions of the international association and the policy of intermodal transport.	XIII	Sunday	- II Colloquium - Defense of seminar work	XIV	Sunday	- Final exam.	XV	Weeks		XVII – XX Sunday		Supplementary classes and remedial examperiod
Preparatory Sundays																																																										
And	Sunday	- intermodal transport system.																																																								
II	Sunday	- Cargo manipulative units.																																																								
III	Sunday	- Packing and consolidation of units in the transport chain.																																																								
IV	Sunday	- Means of transport in intermodal transport.																																																								
V	Sunday	- Standardization and codification in intermodal transport.																																																								
YOU	Sunday	- Manipulative units and means of transport in intermodal chains of dangerous goods.																																																								
VII	Sunday	- Intermodal transport terminals.																																																								
VIII	Sunday	- I Colloquium																																																								
VIII	Sunday	- Transport and transport infrastructure, operators and telematics systems in IT.																																																								
IX	Sunday	- Basic technologies of intermodal transport.																																																								
X	Sunday	- Container terminals and technological operations within them.																																																								
XI	Sunday	- Methodology of optimization of intermodal transport chains, specific requirements in chains of dangerous goods.																																																								
XII	Sunday	- regulations, conventions of the international association and the policy of intermodal transport.																																																								
XIII	Sunday	- II Colloquium - Defense of seminar work																																																								
XIV	Sunday	- Final exam.																																																								
XV	Weeks																																																									
XVII – XX Sunday		Supplementary classes and remedial examperiod																																																								
STUDENT LOAD																																																										
Sunday 5 credits X 40/30 = 6.6 hours Structure:		In the semester Teaching and final exam: 6.6 hours x 16 = 105.6 hours																																																								



- 2 hours of lectures - 2 hours of exercise - 2 hours for consultation and self-employment	Necessary preparations: before the start of the semester (administration, enrollment, certification) 2 x 6.6 hours = 13.2 hours Total load for object 5 x 30 = 150 hours Supplementary work: for the preparation of the exam in the makeup exam period, including passing the makeup exam 31.2 hours Load structure: 105,6 hours (Teaching) + 13,2 hours (Preparation) + 31,2 hours (Supplementary work)
Students are required to attend classes	
Literature: 1. Reis, V., Macario, R. Intermodal Freight Transportation. Elsevier, 2019. 2. Lowe, D. Intermodal freight transport. Elsevier, 2005. 3. Monios, J., Bergqvist, R. Intermodal Freight Transport and Logistics. CRC Press Taylor & Francis Group, 2017. 4. Monios, J. Institutional Challenges to Intermodal Transport and Logistics: Governance in Port Regionalisation and Hinterland Integration. Ashgate Publishing Limited, 2014.	
Forms of knowledge testing and assessment: 5 points attendance, 25 points (seminar and homework), 2 colloquiums (2x20), 30 points oral exam	
Special indication for the case	
Name and surname of the teacher who prepared the data: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević	
Note:	

2.5 Regulations in road transport

The study programmes for which it is organized: At the Faculty of Transport, Communications and Logistics, the study program of undergraduate academic studies lasts for three years (VI semesters) of 180 ECTS.	
Conditionality of other subjects: No conditions for applying and listening to the subject	
Objectives of studying the subject: The aim of the course is for students to master the knowledge in the field of international regulation in the field of road transport, with special emphasis on the regulation of transport of dangerous goods	
Learning Outcomes: Upon completion of the course, students will be able to: • Apply international conventions in the field of road transport and transport; • Apply international agreements in the field of road transport and transport • Applies national and international standards in the field of transport of dangerous goods	
Name and surname of the teacher and associate: Doc. dr. Dragutin Jovanović, Mr. Marijana Prelević	
Method of teaching and mastering the material: Theoretical lectures, practical examples, interactive work..	
Content of the subject:	
Preparatory Sundays	



And	Sunday	- The basics of international transport law.
II	Sunday	- International road transport based on TIR carnets.
OR	Sunday	- Convention on Road Traffic.
IV	Sunday	- Convention on Road Signs.
V	Sunday	- European Treaty on major international transport arteries.
YOU	Sunday	- Convention on the Contract for the International Carriage of Goods by Road (CMR).
VII	Sunday	- The first colloquium
VIII	Sunday	- Convention on the Contract for the International Carriage of Passengers and Luggage by Road (SVR).
IX	Sunday	- Convention on The Non-Stop Carriage of Passengers-INTERBUS; The CEMT Agreement.
X	Sunday	- Convention on the Carriage of Perishable Goods (ATP).
XI	Sunday	- Convention on temporary import-export of goods (ATA).
XII	Sunday	- International trade rules in road transport -INCOTERMS.
XIII	Sunday	- Transport of dangerous goods (ADR):
XIV	Sunday	- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) and the European Agreement on the Operation of Crews on Vehicles Engaged in the International Carriage of Goods and Passengers
XV	Sunday	- The Law on the Transport of Dangerous Goods,
XVI	Sunday	- .
		- The second colloquium
		- Final exam
STUDENT LOAD		
Sunday 5 credits X 40/30 = 6.6 hours Structure: - 2 hours of lectures - 2 hours of exercise - 2 hours for consultation and self-employment		In the semester Teaching and final exam: 6.6 hours x 16 = 105.6 hours Necessary preparations: before the start of the semester (administration, enrollment, certification) 2 x 6.6 hours = 13.2 hours Total load for object 5 x 30 = 150 hours Supplementary work: for the preparation of the exam in the makeup exam period, including passing the makeup exam 31.2 hours Load structure: 105,6 hours (Teaching) + 13,2 hours (Preparation) + 31,2 hours (Supplementary work)
Students are required to attend classes		
Literature: 1. Todorović V., Traffic and Communications, International Treaties, Official Gazette, Belgrade, 2000. 2. Petrović Lj., Transport of dangerous goods in road traffic getting acquainted with the restructured ADR, Trigon Inženjering, Belgrade, 2004. 3. Jovanović, D. I group of authors: Transport of dangerous goods, University Business Academy in Novi Sad, Faculty of Economics and Engineering Management, Novi Sad, 2023. 4. Marović B., Gojković D., Freight forwarding and transport insurance, Stylos, Novi Sad, 2000.		
Forms of knowledge testing and assessment: 5 points attendance, 25 points (seminar and homework), 2 colloquiums (2x20), 30 points oral exam		
Special indication for the case		
Name and surname of the teacher who prepared the data: Prof.dr Dragutin Jovanović		
Note:		



2.6 Logistics of dangerous goods

Name of subject: Logistics of Dangerous Goods				
Subject Code	Case Status	Semestar	Number of ECTS credits	Time's worth of time
	Elective	YOU	5	60

The study programmes for which it is organized: At the Faculty of Transport, Communications and Logistics, the study program of undergraduate academic studies lasts for three years (VI semesters) of 180 ECTS.		
Presentation of other subjects has: Intermodal transport, Storage systems		
Course study goals: Introduction to the basic characteristics of dangerous goods, directions of action in order to increase safety in logistics processes and systems, as well as the latest regulations, international agreements and national regulations applicable in logistics chains of dangerous goods.		
Upon completion of the course, students will be able to: - Identify dangerous cargo and requirements for logistics processes and systems; - Identify the needs and applications of some of the methods of preventive action in dangerous goods flows; - Apply the methodology of risk assessment and accident management; - Apply algorithms for choosing the location and method of storing dangerous goods, etc.		
Name and surname of teachers and associates: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević		
Method of teaching and mastering the material: Theoretical lectures, practical examples, interactive work..		
Content of the subject:		
Preparatory Sundays And Sunday II Sunday OR Sunday IV Sunday V Sunday YOU Sunday VII Sunday VIII Sunday IX Sunday X Sunday XI Sunday XII Sunday XIII Sunday XIV Sunday XV Weeks	– The actuality of hazardous goods logistics, general and specific requirements for logistics processes and systems. – Classification of dangerous goods, basic hazards and preventive measures adapted to hazards. – Hazard marking, behaviour of persons responsible for the transport of dangerous goods. – Specificity of equipment and devices for transshipment and transport of dog cargo. – Problems of mixed cargo in a means of transport or container. – Preventive measures when loading-unloading dangerous goods. – Insurance of cargo, persons and other property. – I Colloquium – Optimization of stacking, packing, fastening and handling of dangerous goods. – Conditions of transport of hazardous waste and environmental protection. – Choice of location of dangerous goods warehouses, safety procedures and preventive measures. – Risk assessment methodology in logistics chains of dangerous goods. – Conditions of routing and scheduling vehicles in the transport of dangerous goods. – II Colloquium – Final exam	
STUDENT LOAD		
Sunday 5 credits X 40/30 = 6.6 hours Structure: - 2 hours of lectures - 2 hours of exercise - 2 hours for consultation and self-employment	In the semester Teaching and final exam: 16 = 105.6 hours Necessary preparations: before the beginning of the semester (administration, enrollment, certification) 2 x 6.6 hours = 13.2 hours	6.6 hours x



	Total load for object 5 x 30 = 150 hours Supplementary work: for the preparation of the exam in the makeup exam period, including passing the makeup exam 31.2 hours Load structure: 105,6 hours (Teaching) + 13,2 hours (Preparation) + 31,2 hours (Supplementary work))
Students are required to attend classes	
Literature: 1. UN, Recommendations for the Transport of Dangerous Goods, United Nations Publications, 2023. 2. Castle Martin, Transport of Dangerous Goods: A Short Guide to the International Regulations, Pira International, 2001 3. Rajan Batta, Changhyun Kwon, Handbook of OR/MS Models in Hazardous Materials Transportation, Springer Science & Business Media, 2013.	
Forms of knowledge testing and assessment: 5 points attendance, 25 points (seminar and homework), 2 colloquiums (2x20), 30 points written exam	
Special indication for the case	
Name and surname of the teacher who prepared the data: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević	
Note:	



3. CURRICULUM OF STUDY PROGRAMME OF UNDERGRADUATE STUDIES FOR MODULES “ROAD TRAFFIC AND SAFETY” AND “LOGISTIC”

The list of subjects in the undergraduate studies of the “Road Transport and Safety” and “Logistics” Module is presented in Table 3, which indicates the subjects that have been modernized.

Table 3. Curriculum by semesters and years of undergraduate studies for Modules of the “Road Transport and Safety” and “Logistics” with Modernized Subjects

No.	SUBJECT	S	COURSE STATUS.	HOURS			ECTS
				L	And	OTH	
FIRST YEAR							
1.	Mathematics	1	M	2	2	-	6
2.	Computing and informatics	1	M	2	2	-	6
3.	Business law	1	M	2	1	-	4
4.	Sociology	1	M	2	2	-	5
5.	English language and	1	M	2	2	-	4
6.	Economy	1	M	2	2	-	5
7.	Statistics and probabilities	2	M	2	2	-	6
8.	Public Relations	2	M	2	2	-	4
9.	Introduction to Information Systems	2	M	2	2	-	6
10.	Fizika	2	M	2	2		6
11.	Entrepreneurship	2	M	2	2	-	5
12.	English Language II	2	M	2	2	-	3
Total ECTS =							60
SECOND YEAR							
1.	Basic forms of traffic	3	M	2	2	-	5
2.	Financial management	3	M	2	2	-	5
3.	Operational research	3	M	2	2	-	6
4.	English Language III	3	M	2	1	-	3
5.	Organization of traffic companies	3	M	3	2	-	6
6.	Urnanism and construction	3	M	2	2	-	5
7.	Investments and Project Management	4	M	2	2	-	6
8.	Marketing in traffic and communications	4	M	2	2	-	5
9.	Traffic economics and communication	4	M	2	2	-	5
10.	E-communication networks and services	4	M	2	2	-	5
11.	E-commerce	4	M	2	2	-	5



12.	English Language IV	4	M	2	2	-	4
Total ECTS =							60
Third year Module Road Traffic and Safety							
1.	Flow theory	5	M	2	2	-	5
2.	Organization of passenger transport in road	5	M	2	2	-	5
3.	The basics of road safety	5	M	2	2	-	5
4.	Organization of transport of dangerous goods	5	M	2	2	-	5
5.	Intermodal transport	5	M	2	2	-	5
6.	Freight forwarding and agency business	5	M	2	2	-	5
7.	Road infrastructure management	6	M	2	2	-	5
Elective courses (1 of 2)							
8.	Regulations in road traffic	5	And	2	2	-	5
9.	Means of transport and maintenance	5	And	2	2	-	5
Elective courses							
10.	Prevention and safety	6	And	2	2	-	5
11.	Forensics and safety.	6	And	2	2	-	5
12.	Practice	6	Or	1	1	-	3
13.	Final paper	6	Or				12
Total ECTS =							60
THIRD YEAR - Module Logistics							
1.	Intermodal traffic	5	Or	2	2	-	5
2.	Industrial transport	5	Or	2	2	-	5
3.	Storage systems	5	Or	2	2	-	5
4.	Freight forwarding and agency business	5	Or	2	2	-	5
5.	Supply chain management	5	Or	2	2	-	5
6.	Organization of logistics centers	5	Or	2	2	-	5
7.	City logistics	6	Or	2	2	-	5
Elective courses (elect 2 out of 3)							
8.	Logistics control	6	And	2	2	-	5
9.	Simulation modeling and logistics systems	6	And	2	2	-	5
10.	Logistics of dangerous goods	6	And	2	2	-	5
11.	Studentka praxa	6	Or	1	1	-	3
12.	Final paper	6	Or				12
Total ECTS =							60
NOTE: designations: S= semester; L= lectures; E= exercises; Oth.= other types of lectures; ECTS = number of ECTS credits; Course status: O= compulsory; E=elective;							



Funded by
the European Union

BROŠURA

ZA PROMOCIJU NASTAVNIH PLANOVA I PROGRAMA OSNOVNIH STUDIJA U OBLASTI PREVOZA OPASNOG TERETA

*UNIVERZITET ADRIATIK BAR, FAKULTET ZA SAOBRAĆAJ,
KOMUNIKACIJE I LOGISTIKU, BUDVA*



*"Finansira Evropska unija. Izražena gledišta i mišljenja su, međutim,
samih autora i ne odražavaju nužno stavove Evropske unije. Ni
Evropska unija ni autoritet koji daje odobrenje ne može biti."*



University of Pristina
Kosovska Mitrovica

Transport of Dangerous Goods - Modernization of Curricula and Development
of Trainings for Professionals in the Western Balkans HEIs
Call: ERASMUS-EDU-2022-CBHE-STRAND-2



SADRŽAJ

O BROŠURI

1. UVOD	5
1.1. Visokoškolska ustanova - Univerzitet Adriatik, Bar-AUB, Fakultet za saobraćaj, komunikacije i logistiku, Budva	5
1.2. Program učenja	5
1.3 Unapređivanje studijskog programa osnovnih studija Modula za Drumski saobraćaj i bezbjednost	6
1.4 Kompetencije	7
1.5 Kvalitet, savremenost i principi	9
2. SADRŽAJI MODERNIZOVANIH PREDMETA I PROGRAM RADA	10
2.1 Organizacija saobraćajnih preduzeća	10
2.2 Organizacija prevoza opasnih tereta u drumskom saobraćaju	12
2.3 Skladišni sistemi	14
2.4 Intermodalni transport	16
2.5 Regulativa u drumskom saobraćaju	17
2.6 Logistika opasnih tereta	19
3. KURIKULUM STUDIJSKOG PROGRAMA OSNOVNIH STUDIJA MODULA DRUMSKI SAOBRAĆAJ I BEZBJEDNOST	21
Spisak predmeta na osnovnim studijama Modula Drumski saobraćaj i Bezbednost i Modul Logistika prikazan je u tabeli 3, u kojoj su naznačeni predmeti koji su modernizovani	21



O BROŠURI

Brošura je napravljena kao promotivni materijal koji treba da pruži neophodne informacije o transportu opasnog tereta i studijskom programu osnovnih studija pod nazivom „Saobraćaj, komunikacije i logistika“ (modul „Drumski saobraćaj i bezbjednost“ i modul „Logistika“) a koji unapređenom sa sadržajima koji se bave transportom opasnih materija na Univerzitetu Adriatik Bar, Fakultetu za saobraćaj, komunikacije i logistiku u Budvi.

Cilj Brošure je da budućim studentima osnovnih studija Modula "Drumski saobraćaj i bezbjednost" i Modula Logistika prikaže kako se kroz studiranje prate novi trendovi u razvoju transportnog sektora za prevoz opasnih materija i koje kompetencije se stiču iz tu oblast. To je urađeno kroz modernizaciju postojećih predmeta u dva modula i to „Drumski saobraćaj i bezbjednost“ i „Logistika“.

Univerzitet Adriatik Bar, Fakultet za saobraćaj komunikacije i logistiku je partner u ERASMUS+ Projektu DGTRANS (<https://dgtrans.pr.ac.rs/>) koji se bavi transportom opasnog tereta. Ciljevi DGTRANS projekta su oslikani kroz promjene koje su unijete na osnovnim studijama kao i aktivnostima za unapređivanje transporta opasnog tereta.

Takođe Brošura je namenjena i svim ostalim učesnicima a posebno građanima, donosiocima odluka na lokalnom i nacionalnom nivou, i privatnom sektoru.

AUTORI:

Prof. Emeritus dr Nataša Gospić

Prof. dr Dragutin Jovanović

Prof.dr Snežana Tadić

Docent dr Oliver Popović

Docent dr Predrag Stanojević

Mrs Darjana Lopičić



PROJECT INFORMATION

Project name	Transport of dangerous goods - Modernization of curricula and development of trainings for professionals in the Western Balkans
Akronim project	DGTRANS
Project reference number	101082187/ERASMUS-EDU-2022-CBHE-STRAND-2
Funding scheme	Capacity building in the field of higher education: Strand 2
Web address	www.dgtrans.pr.ac.rs
Coordination institution	University of Prishtina in Kosovska Mitrovica
Project duration	01 December 2022 – 30 November 2025

DOCUMENT CHECKLIST

Work package	WP3: Development of DG and lab curricula
Ref. no. And the name of the activity.	7.3. Promotional material for student enrolment
Shipment Title	BROCHURE FOR THE PROMOTION OF CURRICULA IN THE FIELD OF TRANSPORT OF DANGEROUS GOODS
Leading institution	The University of Óbuda (OE)
Author(s)	Nataša Gospić, Srđa Popović, Dragutin Jovanović, Oliver Popović, Ivana Buzdovan, Predrag Stanojević, Snežana Tadić, Darijana, Lopičić
Document Status	Final
Document version and date	V01, 18.04.2024
Level of dissemination	Public

HISTORY OF VERSIONING AND CONTRIBUTIONS



Version	Date	Audit description	Partner responsible
v.01	18.04.2024.		
v.02	23.04.2024		



1. UVOD

1.1. Visokoškolska ustanova - Univerzitet Adriatik, Bar-AUB, Fakultet za saobraćaj, komunikacije i logistiku, Budva

Fakultet za saobraćaj, komunikacije i logistiku, Budva (FSKL) je osnovan 2008. godine u Beranama, Crna Gora, a sada ima sjedište u Budvi, Crna Gora. FSKL je 2017. godine potpisao Ugovor o pridruživanju sa Univerzitetom Adriatik Bar (AUB), mijenjajući naziv u Univerzitet Adriatik, Bar - Fakultet za saobraćaj, komunikacije i logistiku, Budva-FSKL.

Fakultet je akreditovan i licenciran za studijski program 3+2 „Saobraćaj, komunikacije i logistika” akreditovan i licenciran za doktorske studije Saobraćajnog inženjerstva.

Za Crnu Goru, kao ekološku državu sa strateškim pravcima razvoja „turizam i eko-ekonomija”, saobraćaj je određen kao osnovni faktor u realizaciji tih strateških pravaca. Evidentan nedostatak profesionalaca iz oblasti saobraćaja, komunikacija i logistike definisao je misiju Fakulteta kao „obrazovanje inženjera (bačelor, master, doktor) iz oblasti železničkog, drumskog, vazdušnog i poštanskog saobraćaja, komunikacija i logistike, zasnovano na savremenim znanjima (teorije i prakse), kojim će moći da razvijaju transportni sistem Crne Gore i da ga efikasno uključe u evropski i svjetski transportni sistem“.

1.2. Program učenja

Studijski program master studija nosi naziv "Saobraćaj, komunikacije i logistika". U okviru ovog studijskog programa formirani se moduli: Drumski saobraćaj i bezbjednost, Poštanski saobraćaj, Vazdušni saobraćaj, Železnički saobraćaj, Elektronske komunikacije, Logistika i Menadžment. Studijski program je zasnovan na najnovijim naučnim saznanjima i praksi i omogućava obrazovanje inženjera koji će biti osposobljeni da planiraju, projektuju, upravljaju i kontrolišu procese i sisteme u različitim oblastima saobraćaja, komunikacija i logistike. Pri tome se posebna pažnja poklanja činjenici da



inženjeri steknu primenjena znanja i vještine koje će predstavljati dobru osnovu za praktičan rad koje im omogućavaju da se uspješno uključe u oblasti saobraćaja, komunikacija i logističke kompanije ili da nastave školovanje na doktorskim studijama.

U realizaciji Studijskog programa koristi se savremena literatura i angažuje vodeći nastavni kadar iz oblasti saobraćaja, komunikacija i logistike iz zemlje i regiona, sa ciljem kontinuiranog unapređenja nastavnih programa svakog od Modula. Sam pogled na navedene naučne discipline ukazuje da na FSKL-u budući inženjeri dobijaju širok spektar opštih i specijalizovanih znanja, koja ih sveobuhvatno obrazuju kao profesionalce u oblasti drumskog saobraćaja i bezbjednosti.

1.3 Unapređivanje studijskog programa osnovnih studija Modula za Drumski saobraćaj i bezbjednost

Opasne materije (DG) su materijali koji zbog svojih karakteristika mogu predstavljati rizik za ljude, životinje ili životnu sredinu. Učešće DG u nesreći može dovesti do požara, eksplozija i ispuštanja toksičnih gasova, proizvodeći ozbiljne posledice po zdravlje ljudi i životnu sredinu. Kako bi se umanjili rizici, transport opasnog tereta (TDG) u Evropi podliježe različitim propisima sa stalno rastućom potrebom za obrazovanim i stručnim kadrovima. ERASMUS + Projekat DGTRANS, u kome je FSKL partner, postavio je glavne ciljeve kao:

- Identifikovati ključne rizike transporta opasnog tereta (TDG) drumskim putem u partnerskim zemljama Zapadnog Balkana -ZB u skladu sa propisima;

- Unaprijediti postojeće i razviti nove nastavne planove i programe osnovnih i master studija, koji izučavaju TDG, u skladu sa zahtjevima Bolonjske deklaracije i nacionalnim standardima akreditacije. Ovi predmeti treba da obuhvati i odredbe koje se tiču opasnog tereta i odredbe koje se odnose na transportnu opremu i transportne operacije.

- Uspostavljanje centara za obuku u okviru visokoškolske ustanove (VŠU).

- Najvažniji rezultati projekta biće modernizacija postojećih nastavnih planova i programa u delu koji se odnosi na TDG i rukovanje kao i da nastavni plan i program treba da poveća svijest o opasnostima koje mogu nastati pri nepropisnom transport i rukovanju opasnog tereta.



Opasne materije (DG), koje po svojim karakteristikama nose ozbiljne rizike po zdravlje i živote ljudi i okoline predstavljaju izazove u svim vidovima transporta i skladištima u odgovarajućim logističkim centrima. Ovi aspekti nisu dovoljno zastupljeni u postojećem Studijskom programu osnovnih studija, a potreba za kadrovima sa ovom specijalizacijom je svakodnevno veća.

Nakon urađenih analiza sadržaja Modula Drumski saobraćaj i bezbjednost, zaključeno je da je potrebno u pojedine predmete na osnovnim studijama uvesti aspekte transporta i skladištenja DG kroz modernizaciju sadržaja predmeta, a imajući u vidu ciljeve ERASMUS+ Projekta DGTRANS. U tom smislu Vijeće Fakulteta za saobraćaj, komunikacije i logistiku je donijelo odluku da se modernizuje 6 predmeta sa Modula za drumskin saobraćaj i bezbjednost (četiri) i Modula za logistiku (dva), koji su prikazani u Tabeli 1.

Tabela 1. Pregled modernizovanih predmeta osnovnih studija Modula za drumskin saobraćaj i bezbjednost i Modula za Logistiku

	NAZIV PREDMETA	S		STATUS	SATI			ECTS	Modul
					P	V	Dt		
		DRUGA/TREĆA GODINA							
IP1.	ORGANIZACIJA TRANSPORTNIH PREDUZEĆA	3		0	3	2	-	6	Drumski saob.
IP2.	ORGANIZACIJA PREVOZA OPASNIH TERETA U DRUMSKOM SAOBRAĆAJU	5		0	2	2	-	5	Drumski Saob.
IP3.	SKLADIŠNI SISTEMI	5		0	2	2	-	5	Logistika
IP4.	INTERMODALNI TRANSPORT	5		0	2	2		5	Zajednički
IP5.	REGULATIVA U DRUMSKOM SAOBRAĆAJU	6		I	2	2	-	5	Drumski saob.
IP6.	LOGISTIKA OPASNIH TERETA	6		I	2	2	-	5	Logistika
	Total ECTS=							31	
	LEGENDA S-semestar; O-Obavezni, I- Izborni, P-predavanja; V-vežbe; Dt.=drugi tipovi predavanja; ECTS=broj kredita;								

1.4 Kompetencije

Zahtjevi za kompetencije stručnjaka koji rade u sektor transporta opasnih tereta (TDG) su veoma široki. Vještine za integralno upravljanje transportom opasnog tereta,



tehničko znanje za suočavanje sa TDG i njegovim skladištenjem, upravljanje svakodnevnim problemima, izazovima i rizikom, kao i fundamentalno poznavanje opasnog tereta su važni elementi u katalogu kompetencija stručnjaka i njihov dalji razvoj u sektoru TDG. Takođe, neophodne su i tzv “meke” vještine, uključujući odgovarajuće manire tokom komunikacije i prezentacije, kao i iskustvo u upravljanju projektima. Izradom Kataloga kompetencija i kurseva definiše se integralni pristup i multidisciplinarnost kao preduslov za razvoj profesionalizma u oblasti TDG.

Kompetencije koje se stiču unapređivanjem Studijskog programa Modula za “Drumski saobraćaj i bezbjednost “ i Modula za “Logistiku” za definisane predmete iz Tabele 1 prikazane su u Tabeli 2 sa istim obilježavanjem predmeta kao u Tabeli 1. (IP1-IP6= .

Tabela 2. Kompetencije modernizovanih predmeta

Kompetencije		Obavezni MS/Izborni predmeti ES					
		IP1	IP2	IP3	IP4	IP5	IP6
Generičke kompetencije	Kapacitet za analizu i sintezu	X	X	X	X	X	X
	Kapacitet za primjenu znanja u praksi	X	X	X	X	X	X
	Usmene i pismene kompetencije	X	X	X	X	X	X
	Razvoj kompjuterskih kompetencija	X	X	X			X
	Razvoj istraživačkih vještina	X	X	X	X	X	X
	Upravljanje informacijskim vještinama	X	X	X			X
	Kritičke i samokritičke sposobnosti	X	X	X	X	X	X
	Sposobnost prilagođavanja novim situacijama	X	X	X	X	X	X
	Kapacitet za generisanje novih ideja (kreativnost)	X	X	X	X	X	X
	Rješavanje problema	X	X	X	X	X	X
	Timski rad	X	X	X	X	X	X
	Liderstvo	X	X		X		X
	Sposobnost rada u multidisciplinarnom timu	X	X	X	X	X	X
	Sposobnost komunikacije sa ljudima na terenu	X		X			X
	Inicijativa i preduzetnički duh	X	X				X
	Integritet i etička predanost	X	X	X	X	X	X
	Donošenje odluka	X	X	X		X	X
	Sinteza informacija za određivanje perspektive problema ili trenda u sigurnosti TDG	X	X			X	X
	Holistički i proaktivni pristup	X	X	X	X	X	X
	Prepoznavanje razlika TDG	X	X	X	X	X	X



	Svijest o opterećenju posla i ograničenjima	X	X	X	X	X	X
	Svijest o profesionalnoj odgovornosti	X	X	X	X	X	X
Predmetno specifične kompetencije	Svijest o značaju bezbednosti TDG za razvoj društva	X	X	X	X	X	X
	Razumijevanje principa sistema bezbednosti TDG i definisanje aktivnosti kao njihovog odgovora	X	X	X	X	X	X
	Kreiranje novih tehnoloških rješenja i poboljšanja koja unapređuju transportne procese u tokovima opasnih tereta		X		X	X	
	Razumijevanje odnosa između aktivnosti TDG i javnosti	X				X	X
	Razumevanje uloge regulatornih tela za TDG	X	X		X		
	Razumijevanje važnosti TDG na putevima za održivi razvoj	X	X		X	X	
	Prepoznavanje upravljanja bezbjednošću TDG kao ključnog faktora održivosti	X	X		X	X	
	Sposobnost učešća u svim fazama planiranja, organizacije logističkih operacija u gradskoj logistici.			X			X
	Sposobnost primjene teorijskih i praktičnih znanja u izvršavanju logističkih operacija u gradskoj logistici			X			X

1.5 Kvalitet, savremenost i principi

Studijski program Modula za drumski saobraćaj i bezbjednost i Modula za logistiku je u saglasnosti sa evropskim trendovima i statusom profesije i nauke u odgovarajućem obrazovnom i naučnom polju i uporediv je sa sličnim programima u inostranim i visokoškolskim ustanovama. Usaglašavanje studijskog programa za TDG student stiče znanje, vještine i sposobnosti koje omogućavaju ostvarivanje nadležnosti i ishoda učenja koje su potrebne u TDG. Studijski program je usklađen sa ciljevima ERASMUS+ Projekta DGTRANS. Takođe, primjenjeni su i principi iz Reakreditacije Studijskog programa za period 2020-2025 da svaki kurs/predmet traje jedan semestar, ima kreditni sistem, izborne predmete i ne zahtjeva novu akreditaciju ukoliko su promjene manje od 30%, što je u ovom unapređenju studijskog programa slučaj.



2. SADRŽAJI MODERNIZOVANIH PREDMETA I PROGRAM RADA

U daljem tekstu prikazane su Informacione liste modernizovanih predmeta na osnovnim studijama Modula za Drumski saobraćaj i bezbjednost i Modula za Logistiku, a u formi koju zahtijeva Agencija za kontrolu kvaliteta visokog obrazovanja, Crne Gore. U listama su naglašeni izmjenjeni djelovi i program rada po nedeljama uvođenjem aspekta TDG. Modernizovani kursevi su potvrđeni Odlukom Vjeća Fakulteta 4.09.2023. Primjena modernizovanih predmeta počinje sa školskom 2024/2025.

2.1 Organizacija saobraćajnih preduzeća

Naziv predmeta: Organizacija saobraćajnih preduzeća				
Šifra predmeta	Status predmeta	Semestar	Broj ECTS kredita	Fond časova
	Obavezni	III	6	60

Studijski programi za koje se organizuje: Na Fakultetu za saobraćaj, komunikacije i logistiku studijski program osnovne akademske studije traju tri godine (VI semestara) obima 180 ECTS.
Uslovljenost drugim predmetima: Nema uslova za prijavljivanje i slušanje predmeta
Ciljevi izučavanja predmeta: Sticanje najnovijih znanja iz organizacije, upoznavanje i ovladavanje savremenim metodama i tehnikama relevantnim za organizaciju i njihova primjena u poslovanju saobraćajnih i komunikacionih preduzeća. Kroz znanja buduci profesionalci će biti spremni da se nose s izazovima modernog poslovnog okruženja i osigurati siguran i učinkovit transport različitih vrsta tereta, uključujući i opasne materije.
Ishod predmeta: Po završetku studija student će biti sposoban da: Identifikuje osnovne probleme i sagleda relevantne faktore za donošenje odluka u organizaciji preduzeća. • Analizira poslovne izazove i identifikira ključne faktore za uspješno donošenje poslovnih odluka. • Primjenjuje koncepte strategijskog planiranja i upravljanja promjenama u organizaciji. • Primjenjuje modele vezane za organizaciju preduzeća. • Razumije različite modele organizacijske strukture i njihove prednosti. • Analizira procese unutar preduzeća kako bi optimizirao efikasnost i produktivnost. • Primjenjuje odgovarajuće modele u reorganizaciji preduzeća i organizaciji poslovnih funkcija. • Identifikira potrebu za reorganizacijom i predlaže modele za bolju raspodjelu resursa i odgovornosti. • Planira i provede promjene u organizaciji uz minimalne poremećaje u poslovanju. • Utvrdi najpovoljnije metode/modele za projektovanje organizacije. • Analizira specifične zahtjeve organizacije i odabire optimalne modele za projektiranje i usklađivanje poslovnih procesa.



• Utvrdi korake za kontrolu i bezbjedonosne mjere pri organizaciji transporta tereta, posebno pri transportu opasnih materija. • Razumije principe upravljanja rizicima i primjenjuje ih u planiranju i organizaciji transporta tereta. • Identificira opasne materije i pridržava se zakonodavstva i regulacija koje se odnose na njihov transport. • Implementira sigurnosne protokole i mjere kako bi osigurao siguran transport opasnih materija. • Razumije koncepte bezbjednosti pri transportu opasnih materija. • Prepoznaje potencijalne opasnosti i rizike pri transportu opasnih materija. • Primjenjuje metode za minimiziranje rizika, uključujući pravilno pakiranje, označavanje i manipulaciju opasnim materijama.		
Ime i prezime nastavnika i saradnika: Prof.dr Dijana Medenica-Mitrović		
Metod nastave i savladanja gradiva: Teorijska predavanja, praktični primjeri, interaktivni rad.		
Sadržaj predmeta:		
Pripremne nedjelje		
I	Nedjelja	Pojam i razvoj organizacije - Uvod u osnove organizacije i njen značaj u poslovnom okruženju. - Razvoj organizacija kroz istoriju utjecaj tehnoloških promjena.
II	Nedjelja	Tipovi organizacione strukture - Analiza različitih tipova organizacijske strukture: funkcionalna, matrica, mrežasta, divizionarna itd. - Prednosti i nedostaci svakog tipa strukture.
III	Nedjelja	Organizacioni modeli preduzeća - Pregled tradicionalnih i modernih organizacionih modela. - Primjena fleksibilnih modela u suvremenim organizacijama.
IV	Nedjelja	Organizovanje velikih poslovnih sistema - Upravljanje složenim organizacionim strukturama. - Koordinacija među različitim sektorima u velikim poslovnim sistemima.
V	Nedjelja	Savremeni modeli saobraćajnih preduzeća u razvijenim zemljama tržišne privrede - Analiza modela saobraćajnih preduzeća s naglaskom na inovacije i efikasnost. - Prilagođavanje transporta opasnih materija unutar ovih modela.
VI	Nedjelja	Poslovna i razvojna politika - Utjecaj poslovne politike na organizacione odluke i strategije. - Razvojne politike usmjerene na unapređenje transporta opasnih materija.
VII	Nedjelja	Izrada biznis plana - Koraci u izradi detaljnog biznis plana za transport svih vrsta terete uključujući i transport opasnih materija. - Analiza tržišta, konkurencije, troškova i potencijalnih rizika.
VIII	Nedjelja	Organizaciona kultura - Razumijevanje važnosti organizacijske kulture u postizanju ciljeva. - Kreiranje sigurnosne svijesti i kulture u kontekstu transporta opasnih materija.
IX	nedjelja	I kolokvijum
X	nedjelja	Organizacija poslovnih funkcija - Upravljanje ključnim poslovnim funkcijama kao što su nabava, logistika, prodaja. - Specifičnosti organizacije tih funkcija u transportu opasnih materija.
XI	nedjelja	Poslovni informacioni sistem - Uloga informacijskih sistema u organizaciji transporta poseban osvrt na transport opasnih materija. - Primjena tehnologije za praćenje, upravljanje i sigurnost transporta.
XII	nedjelja	Organizacija kontrole i bezbjednosti - Implementacija sigurnosnih standarda i protokola u organizaciji transporta terete posebno na transport opasnih materija. - Upravljanje rizicima, planiranje sigurnosnih mjera i postupaka u hitnim situacijama.
XIII	nedjelja	Organizacija i upravljanje investicijama i projektima - Strategije za efikasno ulaganje u infrastrukturu - Upravljanje projektima za unapređenje sigurnosti i efikasnosti transporta.
XIV	nedjelja	Projektovanje organizacije - Detaljna analiza projektiranja organizacije u kontekstu transporta terete poseban osvrt na transport opasnih materija. - Prilagođavanje strukture i procesa kako bi se osigurala bezbjednost i učinkovitost.
		II kolokvijum
		Završni ispit. Ovjera semestra i upis ocjena. - Završna evaluacija usvojenih znanja i vještina iz predmeta.



XV nedjelja Završna nedjelja XVII – XX nedjelja	Dopunska nastava i popravni ispitni rok - Dodatna podrška za studente koji zahtijevaju dodatno usavršavanje ili imaju potrebu za popravnim ispitom.
OPTEREĆENJE STUDENATA	
<u>Nedeljno</u> 6 kredita X 40/30 = 8 sati Struktura: - 2 sata predavanja - 2 sata vježbi - 4 sata za konsultacije i samostalni rad	<u>U semestru</u> Nastava i završni ispit: 8 sati x 16 = <u>128 sati</u> Neophodne pripreme: pre početka semestra (administracija, upis, ovjera) 2 x 8 sati = <u>16 sati</u> Ukupno opterećenje za predmet 6 x 30 = <u>180 sati</u> Dopunski rad: za pripremu ispita u popravnom ispitnom roku, uključujući i polaganje popravnog ispita <u>36 sati</u> Struktura opterećenja: 128 sati (Nastava) + 16 sati (Priprema) + 36 sati (Dopunski rad)
Studenti su obavezni da pohađaju nastavu i vježbe, rade i predaju sve domaće zadatke i rade oba kolokvijuma	
<u>Literatura</u> [a] Vešović V.,: Organizacija saobraćajnih preduzeća,FSKL,2014. [b] Petković M.i dr.: Organizacija, Ekonomski fakultet, Beograd, 2006. [c] Jovanović, D. I grupa autora: Transport opasnog tereta, Univerzitet privredna akademija u Novom Sadu, Fakultet za ekonomiju I inženjerski menadžment, Novi Sad, 2023.	
<u>Oblici provjere znanja i ocjenjivanje:</u> 5 poena prisustvo, 25 poena (seminarski i domaći zadaci), 2 kolokvijuma (2x20), 30 poena usmeni ispit	
<u>Posebna naznaka za predmet</u>	
<u>Ime I prezime nastavnika koji je pripremio podatke:</u> Prof.dr Dijana Medenica-Mitrović	
<u>Napomena:</u>	

2.2 Organizacija prevoza opasnih tereta u drumskom saobraćaju

Naziv predmeta: Organizacija prevoza opasnih tereta u drumskom saobraćaju				
Šifra predmeta	Status predmeta	Semestar	Broj ECTS kredita	Fond časova
	Obavezni	V	5	60



Studijski programi za koje se organizuje: Na Fakultetu za saobraćaj, komunikacije i logistiku studijski program osnovne akademske studije traju i godine (VI semestara) obima 180 ECTS.	
Uslovljenost drugim predmetima: Intermodalni transport II	
Ciljevi izučavanja predmeta: Cilj izučavanja predmeta je da studenta upozna sa: osnovnim karakteristikama opasnih tereta, najnovijim zahtevima ratifikovanih međunarodnih sporazuma i nacionalne regulative koja se primenjuje u toku logistike opasnog tereta u svim vidovima i granama saobraćaja, osnovnim principima organizovanja i realizacije aktivnosti procesa transporta opasnih tereta kao i okvirima preventivnog postupanja radi bezbednog odvijanja procesa transporta.	
Ishod predmeta Po završetku kursa studenti će biti sposobni da: • Identifikuju opasne terete i zahteve za transportom; • Planiraju realizaciju odvijanja pojedinih aktivnosti procesa transporta opasnog tereta; • Prepoznaju osnovne probleme upotrebe adekvatne ambalaže i vozila, • Obezbeđuju adekvatnu dokumentaciju za transport opasnog tereta • Identifikuju potrebe i projektuju mere preventivne tokom logistike transporta opasnog tereta; • Primene metodologiju procene rizika i postupanja u slučaju nezgode; • Planiraju realizaciju kontrole odvijanja pojedinih aktivnosti procesa transporta opasnog tereta; • Primenjuju primerene korektivne mere radi bezbednog transporta opasnog tereta. • Planiraju i primene algoritme za izbor lokacija i načina skladištenja opasnog tereta i td.	
Ime i prezime nastavnika i saradnika: Prof. dr Dragutin Jovanović, Mr. Desanka Vlačić	
Metod nastave i savladanja gradiva: Teorijska predavanja, praktični primjeri, interaktivni rad.	
Sadržaj predmeta:	
Pripremne nedjelje I Nedjelja II nedjelja III nedjelja IV nedjelja V nedjelja VI nedjelja VII nedjelja VIII nedjelja IX nedjelja X nedjelja XI nedjelja XII nedjelja XIII nedjelja XIV nedjelja XV nedelja	- Opasne materije, opasan teret, podjela opasnih materija na klase - Aktualnost logistike opasnog tereta, opšti i specifični zahtjevi za transport. - Klasifikacija opasnog tereta, osnovne opasnosti kod opasnog tereta i preventivne mjere prilagođene opasnostima. - Međunarodni sporazumi i konvencije u transport opasnog tereta - Obeležavanje opasnosti, ponašanje lica odgovornih za transport opasnog tereta - Funkcionisanje opreme i uređaja na transportnim sredstvima. - Problemi mešovitog tereta na transportnom sredstvu ili kontejneru. Preventivne mere pri utovaru-istovaru opasnog tereta. - Osiguranje tereta, lica i druge imovine. - Specifičnosti i osnovne karakteristike transporta u različitim vidovima saobraćaja. i Optimizacija slaganja, pakovanja, pričvršćivanja i rukovanja opasnim teretom. - Kolokvijum 1 - Učesnici u procesu transporta opasnog tereta, obaveze i osposobljavanje - Uslovi transporta opasnog otpada i zaštita životne sredine. - Transport opasnog tereta sa visokom potencijalnom opasnošću - Ambalaža za transport opasnog tereta i Vozila za transport opasnog tereta - Dokumenta za transport opasnog tereta i Postupak u slučaju nezgode u toku odvijanja aktivnosti logistike opasnog tereta. - Definisanje i metodologija procene rizika u toku odvijanja aktivnosti logistike opasnog tereta. - Problemi rutiranja i raspoređivanja vozila u transportu opasnog tereta, kriterijumi, procedure i algoritmi. - Izbor lokacije skladištenja, bezbednosne procedure i obuka kao oblik preventivnog delovanja. - Kolokvijum 2 - Završni ispit
OPTEREĆENJE STUDENATA	
<u>Nedeljno</u> 5 kredita X 40/30 = 6,6 sati Struktura: - 2 sata predavanja - 2 sata vježbe	<u>U semestru</u> Nastava i završni ispit: 6,6 sati x 16 = 105.6 sati



- 2 sata za konsultacije i samostalni rad	Neophodne pripreme: pre početka semestra (administracija, upis, ovjera) 2 x 6.6 sati = 13.2 sati Ukupno opterećenje za predmet 5 x 30 = 150 sati Dopunski rad: za pripremu ispita u popravnom ispitnom roku, uključujući i polaganje popravnog ispita 31.2 sati Struktura opterećenja: 105,6 sati (Nastava) + 13,2 sati (Priprema) + 31,2 sati (Dopunski rad)
Studenti su obavezni da pohađaju nastavu	
Literatura: 1. ADR – Evropski sporazum o međunarodnom transportu opasnog tereta u drumskom saobraćaju 2. RID – Pravilnik za međunarodni železnički prevoz opasne robe o međunarodnom železničkom prevozu opasnog tereta 3. IMDG – CODE – Pravila za međunarodni transport i otpremu opasnog tereta morem 4. ICAO – TI – Tehničke instrukcije za bezbedan transport opasnog tereta u vazdušnom saobraćaju 5. IATA – DGR – Pravila za opasan teret međunarodne asocijacije za vazdušni transport. 6. Jovanović, D. i Petrović, LJ.: Logistika otpadnih materijala i povratnih sredstava, udžbenik u pripremi za 2011. god., Fakultet za menadžment u saobraćaju i komunikacijama – Berane, Berane, 2011. 7. Jovanović, D. I grupa autora: Transport opasnog tereta, Univerzitet privredna akademija u Novom Sadu, Fakultet za ekonomiju i inženjerski menadžment, Novi Sad, 2023.	
Oblici provere znanja i ocenjivanje: 5 poena prisustvo, 25 poena (seminarski i domaći zadaci), 2 kolokvijuma (2x20), 30 poena pismeni ispit	
Posebna naznaka za predmet	
Ime i prezime nastavnika koji je pripremio podatke: Prof. dr Dragutin Jovanović	
Napomena:	

2.3 Skladišni sistemi

Naziv predmeta: Skladišni sistemi				
Šifra predmeta	Status predmeta	Semestar	Broj ECTS kredita	Fond časova
	Obavezni	V	5	60
Studijski programi za koje se organizuje: Na Fakultetu za saobraćaj, komunikacije i logistiku studijski program osnovne akademske studije traju tri godine (VI semestara) obima 180 ECTS.				
Uslovljenost drugim predmetima: Nema uslova za prijavljivanje i slušanje predmeta				
Ciljevi izučavanja predmeta: Upoznavanje mjesta, uloge i funkcije skladišta u logističkim sistemima, različitih tipova i vrsta skladišnih objekata, njihovih karakteristika u zavisnosti od vrste robe kojoj su namijenjeni. Osim toga, studenti će se upoznati sa metodama, modelima i tehnikama izbora lokacije, upravljanja skladišnim sistemima i optimizacije zaliha.				



Ishod predmeta Po završetku kursa student će biti sposoban da:

- Utvrdi mjesto i ulogu skladišta u logističkom sistemu;
- Izabere i primjeni odgovarajući teoretski model zaliha u konkretnim problemima;
- Utvrdi optimalnu lokaciju skladišta primjenom odgovarajućih lokacijskih modela;
- Definiše osnovnu strukturu skladišnih podsistema i karakterističnih procesa, **posebno u logističkim sistemima za opasne robe;**
- Izabere odgovarajući tip skladišnog objekta za postavljene mjerodavne zahtjeve, **posebno za opasne robe;**
- Postavi relevantne zahtjeve vezane za bezbjednost realizacije procesa u **skladištu opasnih roba;**
- Upravlja procesima u skladišnom sistemu.

Ime i prezime nastavnika i saradnika: Prof. dr Slobodan Zečević, Prof.dr Snežana Tadić

Metod nastave i savladanja gradiva: Teorijska predavanja, praktični primjeri, interaktivni rad..

Sadržaj predmeta:

Pripremne nedjelje		
I	Nedjelja	- Mjesto, uloga i funkcija skladišta u karakterističnim logističkim procesima. - Osnovni podsistemi skladišta i procesa u njima, sa posebnim osvrtom na skladišta opasnih roba. - Značaj problema definisanja broja i lokacije skladišta u širem logističkom sistemu. - Tipični lokacijski modeli i uslovi za njihovu primjenu. - Zalihe, klasifikacija, strategije upravljanja i tipični modeli za optimizaciju zaliha. - Karakteristike robe (posebno opasne) koje definišu relevantne karakteristike procesa u skladištu. - Vrste pakovanja i skladišne jedinice. - I Kolokvijum - Procesi prijema, uskladištenja, čuvanja i otpreme robe u skladišnim sistemima; - Pregled karakterističnih tipova skladišnih objekata po vrsti robe; - Analiza varijanti saobraćajnog povezivanja skladišta i skladišnih objekata sa okruženjem; - Skladištenje opasnih materija i osnovni preduslovi za bezbjednu realizaciju skladišnih procesa; - Primjena informacionih tehnologija u skladišnim sistemima; - II Kolokvijum - Odbrana seminarskog rada; - Završni ispit.
II	nedjelja	
III	nedjelja	
IV	nedjelja	
V	nedjelja	
VI	nedjelja	
VII	nedjelja	
VIII	nedjelja	
IX	nedjelja	
X	nedjelja	
XI	nedjelja	
XII	nedjelja	
XIII	nedjelja	
XIV	nedjelja	
XV	nedjelja	
XVII – XX nedjelja		- Dopunska nastava i popravni ispitni rok

OPTEREĆENJE STUDENATA

<u>Nedeljno</u>	<u>U semestru</u>
5 kredita X 40/30 = 6,6 sati Struktura: - 2 sata predavanja - 2 sata vježbe - 2 sata za konsultacije i samostalni rad	Nastava i završni ispit: 6,6 sati x 16 = 105.6 sati Neophodne pripreme: pre početka semestra (administracija, upis, ovjera) 2 x 6.6 sati = 13.2 sati Ukupno opterećenje za predmet 5 x 30 = 150 sati Dopunski rad: za pripremu ispita u popravnom ispitnom roku, uključujući i polaganje popravnog ispita 31.2 sati Struktura opterećenja: 105,6 sati (Nastava) + 13,2 sati (Priprema) + 31,2 sati (Dopunski rad)

Studenti su obavezni da pohađaju nastavu

Literatura:

1. Slobodan Vukićević, *Skladišta*, Preving, Beograd, 1995 god.
2. Milan Sretenović, *Mehanizacija pretovara*, Univerzitet u Beogradu, Beograd, 1996 god;
3. Edward Frazelle: *World-Class Warehousing and material handling*, McGraw-Hill, 2001.
4. **Sunderesh Heragu, *Facilities Design*, PWS Publishing Company, Boston, 2006.**

Oblici provjere znanja i ocjenjivanje: 5 poena prisustvo, 25 poena (seminarski i domaći zadaci), 2 kolokvijuma (2x20), 30 poena usmeni ispit



Posebna naznaka za predmet
Ime i prezime nastavnika koji je pripremio podatke: Prof. dr Slobodan Zečević, Prof dr Snežana Tadić
Napomena:

2.4 Intermodalni transport

Naziv predmeta: Intermodalni transport																																																							
Šifra predmeta	Status predmeta	Semestar	Broj ECTS kredita	Fond časova																																																			
	Obavezni	V	5	60																																																			
Studijski programi za koje se organizuje: Na Fakultetu za saobraćaj, komunikacije i logistiku studijski program osnovne akademske studije traju tri godine (VI semestara) obima 180 ECTS.																																																							
Uslovljenost drugim predmetima: Nema uslova za prijavljivanje i slušanje drugih predmeta.																																																							
Ciljevi izučavanja predmeta: Upoznavanje osnovnih pojmova, strukture sistema intermodalnog transporta (IT), metodologije planiranja, upravljanja, kontrole i analize procesa u intermodalnim transportnim lancima i sistemima, sa posebnim osvrtom na tokove opasnih roba.																																																							
Ishod predmeta Po završetku kursa student će biti sposoban da: • Identifikuje i kvantifikuje zahtjeve za intermodalnim transportom; • Definiše segmente tržišta intermodalnog transporta u pogledu tokova, tehnologija, korisnika, operatera itd. • Definiše strukturu sistema i zahtjeve svakog elementa u intermodalnom lancu opasnih roba; • Izabere najbolju tehnologiju u realizaciji transportnih lanaca, sa posebnim osvrtom na lance opasnih roba; • Procijeni performanse intermodalnog transportnog lanca.																																																							
Ime i prezime nastavnika i saradnika: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević																																																							
Metod nastave i savladanja gradiva: Teorijska predavanja, praktični primjeri, interaktivni rad..																																																							
Sadržaj predmeta:																																																							
<table><tr><td colspan="2">Pripremne nedjelje</td><td></td></tr><tr><td>I</td><td>nedjelja</td><td>– Sistem intermodalnog transporta.</td></tr><tr><td>II</td><td>nedjelja</td><td>– Tovarno manipulativne jedinice.</td></tr><tr><td>III</td><td>nedjelja</td><td>– Pakovanje i ukрупnjavanje jedinica u transportnom lancu.</td></tr><tr><td>IV</td><td>nedjelja</td><td>– Transportna sredstva u intermodalnom transportu.</td></tr><tr><td>V</td><td>nedjelja</td><td>– Standardizacija i kodifikacija u intermodalnom transportu.</td></tr><tr><td>VI</td><td>nedjelja</td><td>– Manipulativne jedinice i transportna sredstva u intermodalnim lancima opasne robe.</td></tr><tr><td>VII</td><td>nedjelja</td><td>– Terminali intermodalnog transporta.</td></tr><tr><td>VIII</td><td>nedjelja</td><td>– I Kolokvijum</td></tr><tr><td>IX</td><td>nedjelja</td><td>– Transportno-saobraćajna infrastruktura, operateri i telematski sistemi u IT.</td></tr><tr><td>X</td><td>nedjelja</td><td>– Osnovne tehnologije intermodalnog transporta.</td></tr><tr><td>XI</td><td>nedjelja</td><td>– Kontejnerski terminali i tehnološke operacije u okviru njih.</td></tr><tr><td>XII</td><td>nedjelja</td><td>– Metodologija optimizacije intermodalnih transportnih lanaca, specifični zahtevi u lancima opasnih roba.</td></tr><tr><td>XIII</td><td>nedjelja</td><td>– zakonska regulativa, konvencije međunarodne asocijacije i politike intermodalnog transporta..</td></tr><tr><td>XIV</td><td>nedjelja</td><td>– II Kolokvijum - Odbrana seminarskog rada</td></tr><tr><td>XV</td><td>nedelja</td><td>– Završni ispit.</td></tr><tr><td colspan="2">XVII – XX nedjelja</td><td>Dopunska nastava i popravni ispitni rok</td></tr></table>					Pripremne nedjelje			I	nedjelja	– Sistem intermodalnog transporta.	II	nedjelja	– Tovarno manipulativne jedinice.	III	nedjelja	– Pakovanje i ukрупnjavanje jedinica u transportnom lancu.	IV	nedjelja	– Transportna sredstva u intermodalnom transportu.	V	nedjelja	– Standardizacija i kodifikacija u intermodalnom transportu.	VI	nedjelja	– Manipulativne jedinice i transportna sredstva u intermodalnim lancima opasne robe.	VII	nedjelja	– Terminali intermodalnog transporta.	VIII	nedjelja	– I Kolokvijum	IX	nedjelja	– Transportno-saobraćajna infrastruktura, operateri i telematski sistemi u IT.	X	nedjelja	– Osnovne tehnologije intermodalnog transporta.	XI	nedjelja	– Kontejnerski terminali i tehnološke operacije u okviru njih.	XII	nedjelja	– Metodologija optimizacije intermodalnih transportnih lanaca, specifični zahtevi u lancima opasnih roba.	XIII	nedjelja	– zakonska regulativa, konvencije međunarodne asocijacije i politike intermodalnog transporta..	XIV	nedjelja	– II Kolokvijum - Odbrana seminarskog rada	XV	nedelja	– Završni ispit.	XVII – XX nedjelja		Dopunska nastava i popravni ispitni rok
Pripremne nedjelje																																																							
I	nedjelja	– Sistem intermodalnog transporta.																																																					
II	nedjelja	– Tovarno manipulativne jedinice.																																																					
III	nedjelja	– Pakovanje i ukрупnjavanje jedinica u transportnom lancu.																																																					
IV	nedjelja	– Transportna sredstva u intermodalnom transportu.																																																					
V	nedjelja	– Standardizacija i kodifikacija u intermodalnom transportu.																																																					
VI	nedjelja	– Manipulativne jedinice i transportna sredstva u intermodalnim lancima opasne robe.																																																					
VII	nedjelja	– Terminali intermodalnog transporta.																																																					
VIII	nedjelja	– I Kolokvijum																																																					
IX	nedjelja	– Transportno-saobraćajna infrastruktura, operateri i telematski sistemi u IT.																																																					
X	nedjelja	– Osnovne tehnologije intermodalnog transporta.																																																					
XI	nedjelja	– Kontejnerski terminali i tehnološke operacije u okviru njih.																																																					
XII	nedjelja	– Metodologija optimizacije intermodalnih transportnih lanaca, specifični zahtevi u lancima opasnih roba.																																																					
XIII	nedjelja	– zakonska regulativa, konvencije međunarodne asocijacije i politike intermodalnog transporta..																																																					
XIV	nedjelja	– II Kolokvijum - Odbrana seminarskog rada																																																					
XV	nedelja	– Završni ispit.																																																					
XVII – XX nedjelja		Dopunska nastava i popravni ispitni rok																																																					
OPTEREĆENJE STUDENATA																																																							



Naziv predmeta: Regulativa u drumskom saobraćaju				
Šifra predmeta	Status predmeta	Semestar	Broj ECTS kredita	Fond časova
	Izvorni	VI	5	60
<u>Nedeljno</u> 5 kredita X 40/30 = 6,6 sati Struktura: - 2 sata predavanja - 2 sata vježbe - 2 sata za konsultacije i samostalni rad		<u>U semestru</u> Nastava i završni ispit: 6,6 sati x 16 = 105.6 sati Neophodne pripreme: pre početka semestra (administracija, upis, ovjera) 2 x 6.6 sati = 13.2 sati Ukupno opterećenje za predmet 5 x 30 = 150 sati Dopunski rad: za pripremu ispita u popravnom ispitnom roku, uključujući i polaganje popravnog ispita 31.2 sati Struktura opterećenja: 105,6 sati (Nastava) + 13,2 sati (Priprema) + 31,2 sati (Dopunski rad)		
Studenti su obavezni da pohađaju nastavu				
Literatura: 1. Reis, V., Macario, R. Intermodal Freight Transportation. Elsevier, 2019. 2. Lowe, D. Intermodal freight transport. Elsevier, 2005. 3. Monios, J., Bergqvist, R. Intermodal Freight Transport and Logistics. CRC Press Taylor & Francis Group, 2017. 4. Monios, J. Institutional Challenges to Intermodal Transport and Logistics: Governance in Port Regionalisation and Hinterland Integration. Ashgate Publishing Limited, 2014.				
Oblici provere znanja i ocenjivanje: 5 poena prisustvo, 25 poena (seminarski i domaći zadaci), 2 kolokvijuma (2x20), 30 poena usmeni ispit				
Posebna naznaka za predmet				
Ime i prezime nastavnika koji je pripremio podatke: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević				
Napomena:				

2.5 Regulativa u drumskom saobraćaju

Studijski programi za koje se organizuje: Na Fakultetu za saobraćaj, komunikacije i logistiku studijski program osnovne akademske studije traju tri godine (VI semestara) obima 180 ECTS.	
Uslovljenost drugim predmetima: Nema uslova za prijavljivanje i slušanje predmeta	
Ciljevi izučavanja predmeta: Cilj izučavanja predmeta je da studenti ovladaju znanjima iz oblasti međunarodne regulative u oblasti drumskog saobraćaja, sa posebnim naglaskom na regulativu transporta opasnih tereta	
Ishod predmeta : Po završetku kursa studenti će biti sposobni da: • Primjenjuju međunarodne konvencije iz oblasti drumskog saobraćaja i transporta; • Primjenjuju međunarodne sporazume iz oblasti drumskog saobraćaja i transporta • Primjenjuje nacionalne i međunarodne standarde iz oblasti transporta opasnih tereta	
Ime i prezime nastavnika i saradnika: Doc. dr. Dragutin Jovanović, Mr. Marijana Prelević	
Metod nastave i savladanja gradiva: Teorijska predavanja, praktični primjeri, interaktivni rad..	
Sadržaj predmeta:	
Pripremne nedjelje	



I	nedjelja	- Osnove međunarodnog transportnog prava.
II	nedjelja	- Međunarodni drumski transport na osnovu TIR karneta.
III	nedjelja	- Konvencija o saobraćaju na putevima.
IV	nedjelja	- Konvencija o saobraćajnim znakovima na putevima.
V	nedjelja	- Evropski sporazum o glavnim međunarodnim saobraćajnim arterijama.
VI	nedjelja	- Konvencija o ugovoru za međunarodni prevoz robe drumom (CMR).
VII	nedjelja	- Prvi kolokvijum
VIII	nedjelja	- Konvencija o ugovoru o međunarodnom prevozu putnika i prtljaga putevima (SVR).
IX	nedjelja	- Konvencija o vanlinijskom prevozu putnika-INTERBUS; CEMT Sporazum.
X	nedjelja	- Konvencija o prevozu lakokvarljive robe (ATP).
XI	nedjelja	- Konvencija o privremenom uvozu-izvozu robe (ATA).
XII	nedjelja	- Međunarodna trgovinska pravila u drumskom transportu-INKOTERMS.
XIII	nedjelja	- Transport opasnih materija (ADR).
XIV	nedjelja	- Evropski sporazum o međunarodnom transportu opasnog tereta u drumskom saobraćaju (ADR), i Evropski sporazum o radu posada na vozilima koja obavljaju međunarodni transport robe i putnika
XV	nedjelja	- Zakon o transportu opasne robe,
XVI	nedjelja	- .
		- Drugi kolokvijum
		- Završni ispit
OPTEREĆENJE STUDENATA		
<u>Nedeljno</u>		<u>U semestru</u>
5 kredita X 40/30 = 6,6 sati		Nastava i završni ispit: 6,6 sati x
Struktura:		16 = <u>105.6 sati</u>
- 2 sata predavanja		Neophodne pripreme: pre početka semestra
- 2 sata vježbe		(administracija, upis, ovjera)
- 2 sata za konsultacije i samostalni rad		2 x 6.6 sati = <u>13.2 sati</u>
		Ukupno opterećenje za predmet
		5 x 30 = <u>150 sati</u>
		Dopunski rad: za pripremu ispita u popravnom
		ispitnom roku, uključujući i polaganje popravnog ispita
		<u>31.2 sati</u>
		Struktura opterećenja:
		105,6 sati (Nastava) + 13,2 sati (Priprema) +
		31,2 sati (Dopunski rad)
Studenti su obavezni da pohađaju nastavu		
Literatura:		
1. Todorović V., Saobraćaj i komunikacije, Međunarodni ugovori, Službeni glasnik, Beograd, 2000.		
2. Petrović Lj., Transport opasne robe u drumskom saobraćaju - upoznavanje restrukturiranog ADR-a, Trigon Inženjering, Beograd, 2004.		
3. Jovanović, D. I grupa autora: Transport opasnog tereta, Univerzitet privredna akademija u Novom Sadu, Fakultet za ekonomiju i inženjerski menadžment, Novi Sad, 2023.		
4. Marović B., Gojković D., Osiguranje špedicija i transport, Stylos, Novi Sad, 2000.		
Oblici provere znanja i ocenjivanje: 5 poena prisustvo, 25 poena (seminarski i domaći zadaci), 2 kolokvijuma (2x20), 30 poena usmeni ispit		
Posebna naznaka za predmet		
Ime i prezime nastavnika koji je pripremio podatke: Prof.dr Dragutin Jovanović		
Napomena:		



2.6 Logistika opasnih tereta

Naziv predmeta: Logistika opasnih tereta				
Šifra predmeta	Status predmeta	Semestar	Broj ECTS kredita	Fond časova
	Izborni	VI	5	60

Studijski programi za koje se organizuje: Na Fakultetu za saobraćaj, komunikacije i logistiku studijski program osnovne akademske studije traju tri godine (VI semestara) obima 180 ECTS.	
Uslovljenost drugim predmetima: Intermodalni transport, Skladišni sistemi	
Ciljevi izučavanja predmeta: Upoznavanje sa osnovnim karakteristikama opasnih tereta, pravcima djelovanja u cilju povećanja bezbjednosti u logističkim procesima i sistemima, kao i najnovijim propisima, međunarodnim sporazumima i nacionalnom regulativom koja se primjenjuje u logističkim lancima opasnog tereta.	
Ishod predmeta Po završetku kursa studenti će biti sposobni da: • Identifikuju opasne terete i zahtjeve za logističkim procesima i sistemima; • Identifikuju potrebe i primijene neke od metoda preventivnog djelovanja u tokovima opasnog tereta; • Primijene metodologiju procjene rizika i postupanja u slučaju nezgode; • Primijene algoritme za izbor lokacije i načina skladištenja opasnog tereta i td.	
Ime i prezime nastavnika i saradnika: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević	
Metod nastave i savladanja gradiva: Teorijska predavanja, praktični primjeri, interaktivni rad..	
Sadržaj predmeta:	
Pripremne nedjelje I Nedjelja II nedjelja III nedjelja IV nedjelja V nedjelja VI nedjelja VII nedjelja VIII nedjelja IX nedjelja X nedjelja XI nedjelja XII nedjelja XIII nedjelja XIV nedjelja XV nedjelja	– Aktuelnost logistike opasnog tereta, opšti i specifični zahtjevi za logističkim procesima i sistemima. – Klasifikacija opasnog tereta, osnovne opasnosti i preventivne mjere prilagođene opasnostima. – Obilježavanje opasnosti, ponašanje lica odgovornih za transport opasnog tereta. – Specifičnost opreme i uređaja za pretovar i transport opasnog tereta. – Problemi mješovitog tereta u transportnom sredstvu ili kontejneru. – Preventivne mjere pri utovaru-istovaru opasnog tereta. – Osiguranje tereta, lica i druge imovine. – I Kolokvijum – Optimizacija slaganja, pakovanja, pričvršćivanja i rukovanja opasnim teretom. – Uslovi transporta opasnog otpada i zaštita životne sredine. – Izbor lokacije skladišta opasnih tereta, bezbjednosne procedure i mjere preventivnog djelovanja. – Metodologija procjene rizika u logističkim lancima opasnog tereta. – Problemi rutiranja i raspoređivanja vozila u transportu opasnog tereta. – II Kolokvijum – Završni ispit
OPTEREĆENJE STUDENATA	
<u>Nedeljno</u> 5 kredita X 40/30 = 6,6 sati Struktura: - 2 sata predavanja - 2 sata vježbe - 2 sata za konsultacije i samostalni rad	<u>U semestru</u> Nastava i završni ispit: 6,6 sati x 16 = 105.6 sati Neophodne pripreme: pre početka semestra (administracija, upis, ovjera) 2 x 6.6 sati = 13.2 sati Ukupno opterećenje za predmet 5 x 30 = 150 sati



	Dopunski rad: za pripremu ispita u popravnom ispitnom roku, uključujući i polaganje popravnog ispita 31,2 sati Struktura opterećenja: 105,6 sati (Nastava) + 13,2 sati (Priprema) + 31,2 sati (Dopunski rad))
Studenti su obavezni da pohađaju nastavu	
Literatura: 1. UN, Recommendations for the Transport of Dangerous Goods, United Nations Publications, 2023. 2. Castle Martin, Transport of Dangerous Goods: A Short Guide to the International Regulations, Pira International, 2001 3. Rajan Batta, Changhyun Kwon, Handbook of OR/MS Models in Hazardous Materials Transportation, Springer Science & Business Media, 2013.	
Oblici provere znanja i ocenjivanje: 5 poena prisustvo, 25 poena (seminarski i domaći zadaci), 2 kolokvijuma (2x20), 30 poena pismeni ispit	
Posebna naznaka za predmet	
Ime I prezime nastavnika koji je pripremio podatke: Prof. dr Snežana Tadić, Prof. dr Slobodan Zečević	
Napomena:	



3. KURIKULUM STUDIJSKOG PROGRAMA OSNOVNIH STUDIJA MODULA DRUMSKI SAOBRAĆAJ I BEZBJEDNOST

Spisak predmeta na osnovnim studijama Modula Drumski saobraćaj i Bezbednost i Modul Logistika prikazan je u tabeli 3, u kojoj su naznačeni predmeti koji su modernizovani.

Tabela 3. Kurikulum po semestrima i godinama osnovnih studija za Module Drumski saobraćaj i bezbjednost i Module Logistika sa modernizovanim predmetima

No.	PREDMET	S	STATUS KURSA.	ČASOVI			ECTS
				L	E	OTH	
PRVA GODINA							
1.	Matematika	1	0	2	2	-	6
2.	Računarstvo I informatika	1	0	2	2	-	6
3.	Poslovno pravo	1	0	2	1	-	4
4.	Sociologija	1	0	2	2	-	5
5.	Engleski jezik I	1	0	2	2	-	4
6.	Ekonomija	1	0	2	2	-	5
7.	Statistika I vjerovatnoća	2	0	2	2	-	6
8.	Odnosi sa javnošću	2	0	2	2	-	4
9.	Uvod u Informacione sisteme	2	0	2	2	-	6
10.	Fizika	2	0	2	2		6
11.	Preduzetništvo	2	0	2	2	-	5
12.	Engleski jezik II	2	0	2	2	-	3
Total ECTS =							60
SECOND YEAR							
1.	Osnovni vidovi saobraćaja	3	0	2	2	-	5
2.	Finansijski menagment	3	0	2	2	-	5
3.	Operaciona istraživanja	3	0	2	2	-	6
4.	Engleski jezik III	3	0	2	1	-	3
5.	Organizacija saobraćajnih preduzeća	3	0	3	2	-	6
6.	Urbanizam i građevinarstvo	3	0	2	2	-	5
7.	Investicije i Upravljanje projektima	4	0	2	2	-	6
8.	Marketing u saobraćaju i komunikacijama	4	0	2	2	-	5
9.	Eknomika saobraćaja i komunikacija	4	0	2	2	-	5
10.	E-komunikacione mreže i servisi	4	0	2	2	-	5
11.	E-poslovanje	4	0	2	2	-	5
12.	Engleski jezik IV	4	0	2	2	-	4



Total ECTS =							60
TREĆA GODINA Modul rumski saobraćaj i bezbjednost							
1.	Teorija tokova	5	0	2	2	-	5
2.	Organizacija transporta putnika u drumskom	5	0	2	2	-	5
3.	Osnove bezbjednosti drumskog saobraćaja	5	0	2	2	-	5
4.	Organizacija prevoza opasnog tereta	5	0	2	2	-	5
5.	Intermodalni saobraćaj	5	0	2	2	-	5
6.	Špedicija i agencijsko poslovanje	5	0	2	2	-	5
7.	Upravljanje putnom infrastrukturom	6	0	2	2	-	5
Izborni predmeti (1 od 2)							
8.	Regulativa u drumskom saobraćaju	5	E	2	2	-	5
9.	Transportna sredstva i održavanje	5	E	2	2	-	5
Izborni predmeti							
10.	Preventiva I bezbjednost	6	E	2	2	-	5
11.	Forenzika I bezbjednost	6	E	2	2	-	5
12.	Praksa	6	0	1	1	-	3
13.	Završni rad	6	0				12
Total ECTS =							60
TREĆA GODINA – Modul Logistika							
1.	Intermodalni saobraćaj	5	0	2	2	-	5
2.	Industrijski transport	5	0	2	2	-	5
3.	Skladišni sistemi	5	0	2	2	-	5
4.	Špedicija I agencijsko poslovanje	5	0	2	2	-	5
5.	Upravljanje lancima snabdevanja	5	0	2	2	-	5
6.	Organizacija logističkih centara	5	0	2	2	-	5
7.	City logistika	6	0	2	2	-	5
Elective courses (elect 2 out of 3)							
8.	Logistička kontrola	6	E	2	2	-	5
9.	Simulaciono modeliranje I logistički sistemi	6	E	2	2	-	5
10.	Logistika opasnih terete	6	E	2	2	-	5
11.	Studentska praksa	6	0	1	1	-	3
12.	Završni rad	6	0				12
Total ECTS =							60
NOTE: designations: S= semester; L= predavanja; E= vežbe; Oth.= drugi tipovi predavanja; ECTS= broj ECTS kredita; Status kursa: O= obavezni; E=izborni;							

"Finansira Evropska unija. Izražena gledišta i mišljenja su, međutim, samih autora i ne odražavaju nužno stavove Evropske unije. Ni Evropska unija ni autoritet koji daje odobrenje ne može biti."





Co-funded by the
Erasmus+ Programme
of the European Union



ENROLL BASIC STUDIES IN 2024/2025

**TO FACULTY OF TRANSPORTATION, COMMUNICATIONS
AND LOGISTICS – FSKL
AND GAIN THE MOST MODERN KNOWLEDGE IN THE FIELD OF
TRANSPORTATION OF DANGEROUS GOODS**



BUDVA

Univerzitet "Adriatik" - Bar
Fakultet za saobraćaj, komunikacije i logistiku-Budva

**Transport of Dangerous Goods – Modernization of Curricula and Development of Trainings for
Professionals in the Western Balkans HEIs (DGTRANS)**

Contract number 101082187-DGTRANS-ERASMUS-EDU-2022-CBHE

**"Funded by the European Union. Views and opinions expressed are however those of the
author(s) only and do not necessarily reflect those of the European Union. Neither the European
Union nor the granting authority can be."**

**www.fskl-cg.me
fsklbudva@gmail.com**



The study program of the basic academic studies of the Faculty of Traffic, Communications and Logistics, Budva-FSKL is called "Traffic, Communications and Logistics". The following modules work within this study program: Road traffic and safety, Postal traffic, Air traffic, Railway traffic, Electronic communications and Logistics. The study program is based on the latest scientific knowledge and practice and enables the education of engineers who will be able to plan, design, manage and control processes and systems in various areas of traffic, communications and logistics. The study program is accredited and the Faculty is licensed.

FSKL is a partner in the ERASMUS+ Project Transport of dangerous goods - Modernization of study programs and development of training for professionals in the countries of the Western Balkans - DGTRANS.

Dangerous goods (DG) are goods that, due to their characteristics, may pose a risk to people, animals or the environment. The involvement of DG in an accident can lead to fires, explosions and the release of toxic gases, creating serious consequences for human health and the environment.

In order to avoid all these risks and educate experts in the field of transportation of dangerous goods, and fulfilling the goals of the DGTRANS project, FSKL has modernized the existing subjects in the undergraduate studies for the two modules Road Traffic and Logistics as shown in the Table.

Three undergraduate students will spend two weeks (14 days) in lectures at Obuda University in Budapest, gaining the latest knowledge and skills in the field of dangerous goods transport.



**New and modernized courses at FSKL basic studies
On the modules: "Road traffic and safety" and "Logistics"**

No.	SUBJECT	S	Status	Hours			ECTS	Modul
				L	E	Other		
SECOND / THIRD YEAR								
IP1.	Organization Of Transport Enterprises	3	E	3	2	-	6	Road Traffic
IP2.	Organization Of Transportation Of Dangerous Goods In Road Traffic	5	E	2	2		5	Road Traffic
IP3.	Storage Systems	5	E	2	2	-	5	Logistic
IP4.	Intermodal Transport	5	E	2	2		5	Common
IP5.	Regulation In Road Traffic	6	M	2	2	-	5	Road Traffic
IP6.	Logistics Of Dangerous Goods	6	M	2	2	-	5	Logistic
Total ECTS=							31	
NOTE: marks: S= semester; L= lectures; E= exercises; Other = other kinds of lectures; ECTS= number of ECTS credits.								



Transport of Dangerous Goods – Modernization of Curricula and Development of Trainings for Professionals in the Western Balkans HEIs (DGTRANS)

Contract number 101082187-DGTRANS-ERASMUS-EDU-2022-CBHE

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be."

www.fskl-cg.me
fsklbudva@gmail.com



Studijski program osnovnih akademskih studija Fakulteta za saobraćaj, komunikacije i logistiku, Budva-FSKL nosi naziv "Saobraćaj, komunikacije i logistika". U okviru ovog studijskog programa rade sledeći moduli: Drumski saobraćaj i bezbednost, Poštanski saobraćaj, Vazdušni saobraćaj, Željeznički saobraćaj, Elektronske komunikacije i Logistika. Studijski program je zasnovan na najnovijim naučnim saznanjima i praksi i omogućava obrazovanje inženjera koji će biti osposobljeni da planiraju, projektuju, upravljaju i kontrolišu procese i sisteme u različitim oblastima saobraćaja, komunikacija i logistike. Studijski program je akreditovan i Fakultet je licenciran.

FSKL je partner u ERASMUS+ Projektu Transport opasnih tereta - Modernizacija studijskih programa i razvoj treninga za profesionalce u zemljama Zapadnog Balkana -DGTRANS.

Opasni tereti (DG) su tereti koji zbog svojih karakteristika mogu predstavljati rizik za ljude, životinje ili životnu sredinu. Učešće DG u nesreći može dovesti do požara, eksplozija i ispuštanja toksičnih gasova, stvarajući ozbiljne posledice po zdravlje ljudi i životnu sredinu.

U cilju izbegavanja svih ovih rizika i edukacije stručnjaka u oblasti transporta opasnih tereta, a ispunjavajući ciljeve projekta DGTRANS, FSKL je modernizovao postojeće predmete na osnovnim studijama za dva modula Drumski saobraćaj i Logistika kao što je prikazano u Tabeli.

Tri studenta osnovnih studija biće dvije nedelje (14 dana) na predavanjima na Univerzitetu Obuda u Budimpešti, dobijajući najnovija znanja i vještine iz oblasti transporta opasnih tereta.



Novi i modernizovani kursevi na osnovnim studijama FSKL Na modulima: "Drumski saobraćaj i bezbednost" i "Logistika"

Br.	NAZIV PREDMETA	S		STATUS	SATI			ECTS	Modul
					P	V	Dt		
	DRUGA / TREĆA GODINA								
IP1.	ORGANIZACIJA TRANSPORTNIH PREDUZEĆA	3		O	3	2	-	6	Drumski saob.
IP2.	ORGANIZACIJA PREVOZA OPASNIH TERETA U DRUMSKOM SAOBRAĆAJU	5		O	2	2	-	5	Drumski saob.
IP3.	SKLADIŠNI SISTEMI	5		O	2	2	-	5	Logistika
IP4.	INTERMODALNI TRANSPORT	5		O	2	2		5	Zajednički
IP5.	REGULATIVA U DRUMSKOM SAOBRAĆAJU	6		I	2	2	-	5	Drumski saob.
IP6.	LOGISTIKA OPASNIH TERETA	6		I	2	2	-	5	Logistika
	Total ECTS=								31
	LEGENDA S-semestar; O-Obavezni, I- Izborni, P-predavanja; V-vežbe; Dt.=drugi tipovi predavanja; ECTS=broj kredita;								



Funded by
the European Union

UNIVERZITET ADRIATIK BAR - AUB
FAKULTET ZA SAOBRAĆAJ, KOMUNIKACIJE I
LOGISTIKU, BUDVA - FSKL

PAMETAN GRAD - SMART CITY

AUTOR: MSc Ivana Buzdovan

Datum: 24.04.2024.

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be."

**Transport of Dangerous Goods - Modernization of Curricula and Development of
Trainings for Professionals in the Western Balkans HEIs / DGTRANS**

Call: ERASMUS-EDU-2022-CBHE-STRAND-2

Project number: 101082187



PAMETAN GRAD



Funded by
the European Union

Primjena pametnih tehnologija danas postaje obaveza i neophodnost u daljem razvoju država, gradova ali i društva.

Države, gradovi, privredni subjekti i građani koji zanemaruju primjenu pametnih tehnologija ubrzo će se naći na marginama a svako kašnjenje će direktno uticati na ukupni razvoj.

Činjenica je da su u poslednjim decenijama tehnološka unapređenja dovela i do transformacije urbanog života, zbog sve većeg broja stanovnika u gradskim područjima.



Transport of Dangerous Goods - Modernization of Curricula and Development of Trainings for Professionals
in the Western Balkans HEIs / DGTRANS



PAMETAN GRAD



Funded by
the European Union

- U gradovima danas živi 3,5 milijarde ljudi, odnosno polovina ukupnog stanovništva svijeta.
- Predviđa se da će 2030. godine u gradovima biti više od 5 milijardi ljudi, što je izuzetan rast i pritisak na sve strukture grada.
- U tom slučaju, koncept pametnog grada treba da proširi i radikalno transformiše našu tradicionalnu infrastrukturu spajanjem inovacija, pouzdanosti, mobilnosti širom grada i lakoće svakodnevnih usluga u urbanim područjima.
- Primjena pametnih rešenja treba je da obuhvati različite domene kao što su transport i mobilnost, bezbednost i nadzor, zdravstvo, logistika, obrazovanje, komercijalno i industrijsko umrežavanje.



Transport of Dangerous Goods - Modernization of Curricula and Development of Trainings for Professionals
in the Western Balkans HEIs / DGTRANS



PAMETAN GRAD



Kada govorimo o pametnom gradu, nailazimo na veoma veliki broj definicija.

Ono što je zajedničko za sve definicije je da primjena informaciono komunikacionih tehnologija i obrada podataka služi kao sredstvo za rješavanje ekonomskih, socijalnih ekoloških izazova u gradu.

- Tehnološku infrastrukturu pametnog grada čine:
- Informaciono komunikacione tehnologije- ICT;
- Internet stvari- IoT;
- M2M komunikacija;
- Peta generacija mobilnih komunikacija;
- Inteligentni transportni sistemi;
- Pametna mreža.



Transport of Dangerous Goods - Modernization of Curricula and Development of Trainings for Professionals
in the Western Balkans HEIs / DGTRANS



Funded by
the European Union

Stubovi pametnog grada

❖ Osnovni stubovi

UPRAVLAJNJE

EKONOMIJA

SPOSOBNOST

FINANSIRANJE

INFRASTRUKTURA

❖ Tehnološka podrška

E-MOBILNOST

OKRUŽENJE

BEZJEDNOST

JAVNO ZDRAVLJE

SISTEM PLAĆANJA

Transport of Dangerous Goods - Modernization of Curricula and Development of Trainings for Professionals
in the Western Balkans HEIs / DGTRANS



Funded by
the European Union

Pametni gradovi nude brojna rješenja koja su usmjerena na optimizaciju upotrebe energetske resursa. Živimo u sve urbanijem svijetu gdje više od polovine stanovništva boravi u gradovima.

Gradovi troše od 70 do 80 procenata globalne primarne energije i emituju između 50 i 70 procenata ukupne količine gasova sa efektom staklene bašte.

Sada kada je urbanizacija postala trend, gradovi zahtijevaju kontinuirano snabdijevanje energijom za transport, infrastrukturu, distribuciju vode i proizvodnju hrane.



PAMETAN GRAD



Funded by
the European Union

- **Urbani rast rezultira velikom potrošnjom energije**
- Sada kada je urbanizacija postala trend, gradovi zahtijevaju kontinuirano snabdijevanje energijom za transport, infrastrukturu, distribuciju vode i proizvodnju hrane.
- Gradovi troše od 70 do 80 procenata globalne primarne energije i emituju između 50 i 70 procenata ukupnih gasova sa efektom staklene bašte.
- Proizvodnja električne energije i toplote, glavni su izvori gasova sa efektom staklene bašte, a potom poljoprivreda, industrija, transport i drugi sektori.





PAMETAN GRAD



Funded by
the European Union

- **Pametni gradovi nude pametna energetska rješenja**
- Ako se ne preduzmu koraci za poboljšanje situacije, korišćenje energije u gradovima će se više nego utrostručiti do 2050. godine, što će ostaviti ogroman ekološki trag na našu planetu.
- Smanjenje potrošnje energije je prioritetan izazov. Rješenje bi moglo biti u usvajanju energetske efikasne tehnologije čiji je napredak omogućio razvoj Interneta i pametnih gradova.





PAMETAN GRAD



Funded by
the European Union

- Pametan grad koristi IoT senzore (*Internet of Things*, mreža fizičkih objekata – „stvari“ ili predmeta – koji su opremljeni senzorima, softverom i drugim tehnologijama u svrhu povezivanja i razmjene podataka sa drugim uređajima i sistemima preko interneta) i druge tehnologije koje se koriste za prikupljanje dragocjenih podataka iz različitih djelova urbane infrastrukture – puteva, mostova, pruga, komunikacija, vode, struje, većih zgrada i mnogih drugih.
- Prikupljeni podaci imaju ulogu da informišu kako pružaoce, tako i korisnike različitih usluga kako bi svi donosili promišljenije odluke.

