



**Joint Project: Capacity Building in  
the Field of Higher Education  
ERASMUS+ 2018**

**Crisis and Risks  
Engineering for  
Transport Services**

**Dnipropetrovsk National University of Railway Transport  
named after Academician V. Lazaryan,  
Faculty "Management of Traffic Processes"**



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

**Warsaw, 2019**

**Dr.Sc., prof. Pshinko O.  
Dr. Sc., prof. Kuznetsov V.  
PhD, ass.prof. Chernova N.**



## University Profile: Short History; Facts & Figures



Dnipropetrovsk Institute for Railway Engineers (now National University of Railway Transport – DIIT) was founded on March 23, 1930 at the base of the Polytechnic School and the Faculty of Railway Engineers of Kyiv Polytechnic Institute.

Located in the largest metallurgical center of Ukraine and at the busiest railway junction, the Institute shortly became a leader in training highly qualified personnel.

Since that time the University has trained more than 70 thousand specialists.



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# University Profile: Faculties



Structurally, the University consists of 10 faculties that fully meet the demand in qualified personnel from all the branches of railway transport.



The academic staff of the University includes 630 teachers, 75 percent among them hold academic degrees. Teaching is realized by 63 Full Doctors, more than 430 Ph.D., 18 Members of branch academies, 85 Laureates of State and special prizes, and many Honorary scientists and workers in various branches of economy



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# University Profile: Faculties



- Faculty "Bridges and tunnels"
- Faculty "Management of Energy Flows"
- Faculty "Transport Engineering"
- Faculty "Management of traffic processes"
- Faculty "Organization of construction and operation of roads"
- Faculty "Industrial and Civil Engineering"
- Faculty "Economics and Humanities"
- Faculty "Technical Cybernetics"
- Department of military training
- Educational and Scientific Center of Distance Education
- Educational and Scientific Center for the Development of Professional Education
- Center for pre-university training and work with foreign students



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## University Profile: Military Department



University trains officers for the for the State special service of the Ministry of Infrastructure. After graduation all officers work on the railways of Ukraine, industrial enterprises, academic institutions and other organizations.

The main research directions:

- Using of military units of rehabilitation and construction of the national transport system;
- Organization of military communications and military transportation.



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# University Profile: Facts & Figures/ Conferences



**Exhibition "Inter-Transport"**  
Jun 3-5, 2016, Odessa



**"Education, tourism and sport in the era of power and happiness",**  
Ashkhabad (Turkmenistan), 11-14 November 2013



**"5th International Conference on recent advanced technology in railway engineer ICRARE 2017,**  
Iran, 30.05 2017



**International exhibition "Innovation in modern education"**  
25-27 October 2016, Kiev

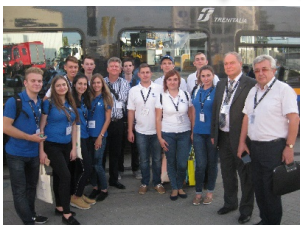


**II international scientific-practical conference "Energyoptimal technology of the transportation process",** 20-25.05.2017, Lviv

**International Scientific and Practical Conference «Energy-optimal technology, logistic and safety on transport»,** 18 - 19 June 2018, Lviv



**InnoTrans-2018**  
Berlin, 18-21 September 2018



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## University Profile: Key activities



1. MISCTIF Master: “Interoperability / Safety / Certification” in Ukraine and Central Asia international railway transport;



2. CITISSET. Communication and Information Technology for Improvement Safety and Efficiency of Traffic Flows: EU-RU-UA Master and PhD Programs in Intelligent Transport Systems;



3. MieTGV -Joint European project «Master of infrastructure and exploitation of high-speed railway transport in Russia and Ukraine»;



4. SEREIN -"Modernization of postgraduate studies on security and resilience for human and industry related domains".



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# University Profile: Key activities/ COOPERATION with “Ono academic college”, Israel



## Short-term one week educational project STARTUP-DIIT, 2016



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первый шаг  
к успеху!**



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# University Profile: Key activities/ Certification of products for transportation



**УЧЕБНЫЕ КУРСЫ  
«ПРАКТИЧЕСКИЕ АСПЕКТЫ  
ЕВРОПЕЙСКОЙ СЕРТИФИКАЦИИ  
ПРОДУКЦИИ И УСЛУГ ДЛЯ  
ЖЕЛЕЗНОДОРОЖНОГО ТРАНСПОРТА»**

**4-7 октября, г. Днепр**



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## University Profile: Key activities/ Research



**For the creation, development, implementation of national family models of modern passenger wagons for accelerated traffic**  
**Rector of Dnipropetrovsk National University of Railway Transport named after Academician V. Lazaryan Dr. Sc., Prof. Pshinko Oleksandr, was awarded by the State Prize of Ukraine in Science and Technology in 2005.**



**In 1972, scientists of the University under the leadership of academician V. Lazaryan tasted the high-speed experimental vehicle on Pridneprovskaya railway, the a speed reached 250 km/h**



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## University Profile: Key activities/ Research



*Diesel locomotive ER20CF («Siemens» )  
testing for Lithuanian railways (2008)*



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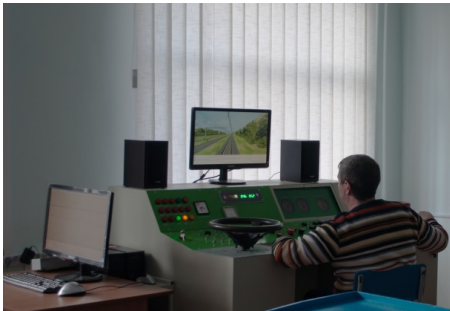
## University Profile: Key activities/ Locomotive driver simulator



Simulator consists of two workstation – a workstation of the instructor and a workstation of the trainee.

### *The software allows:*

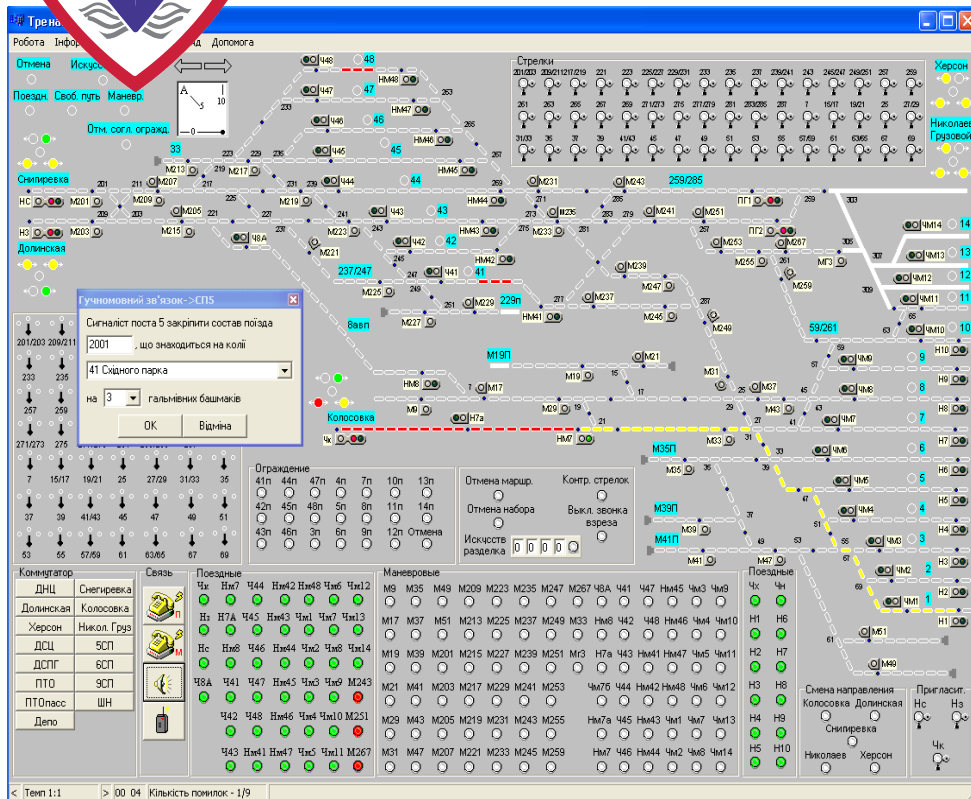
- to make and to operate databases of lines, trains, schedules
- to calculate the optimum modes of train driving in the aspect of consumed energy,
- to operate train situation during the educational task: to operate alarm systems, reception of the train at station, to establish obstacles along the line and on road joints, to change weather conditions
- to simulate the emergence of the most characteristic malfunctions in locomotive subsystems, trains
- to simulate the work of traction, brake and control systems of locomotives. Performances of these systems is controlled by the driver according to the indications of devices and indications of the alarm system
- to simulate the longitudinal dynamics of trains and to define the maximum values of longitudinal dynamic efforts in train
- to calculate the braking distance with the precision 10–20 m
- to simulate the movement of the train with different types of bogies, various load mode and several locomotives
- to reproduce during the movement of the train a panorama of a real line on which are shown: surrounding landscape, buildings, constructions, signals, mile poste and other objects of infrastructure



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# University Profile: Key activities/ Simulator for training of the dispatcher



The simulator for training station dispatcher shows all necessary information on the display of the control post. In the course of training, the device simulates the technological process of train service in detail, taking into account train categories, switching and shunting, and all other operations required. The simulator also permits simulation of emergency situations resulting from a failure in automatic traffic control systems in a railway station.



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# University Profile: Key activities/ Automated management system for bridges and other structures



Мости : 4

Тип штучної споруди: залізничний № картки споруди: 2 Пошук

Місце розташування: Альпійські Альпи Колія: Характеристика прогонової будови Опори мостів Класи та габарити Регуляційні споруди Дефекти

Рік будівництва споруди: 1968 Поздовжній ухил: 0,004

Величина споруди: мали мости (<25 м) Поперечний ухил:

Матеріал штучної споруди: залізобетон Проектна організація:

Кількість трій унів: 3 Розмір прогону (схема): 3x5,5 Власник споруди: залізниця

Розмір прогону (схема): 3x5,5 Власник автопробіду:

Повна довжина споруди: 22

Повна довжина споруди без сходів:

Відстань між шафними стінками: 18,2

Отвір моста у прольоті:

Підмостовий габарит:

Габарит

- висота:

- ширина:

Наявність комунікацій:

Кількість колій на споруді: 1

Кількість колій під мостом:

Кількість головних колій під мостом:

Кількість станційних колій під мостом:

Запис: 14 1 191

Звіт

Звіт АГУ - 4 (Таблиця - 12)

Звіт АГУ - 4 (Таблиця 13)

Підсумковий звіт

споруд. шт	задніми стінками, пог. м.	Кам'яних і бетонних	Залізо-бетонних	Дерев'яних	металу, т	шт./т.	Кам'яних і бетонних	Залізо-бетонних	У т.ч. попередньо-напружених	Дерев'яних	
1	2	3	4	5	6	7	8	9	10	11	12
7	135	1 615.95	344	46			49	328			
8			11 074.98	1 019.50			546.98	2 256.83			
9	у тому числі:										
10	1. Залізничні постійні										
11	а) Металеві на постійних опорах										
12											
13	б) Залізобетонні										
14											
15	в) Масивні (кам'яні, бетонні)										
16											
17	г) Змішані										
18											
19	2. Тимчасові - всього										
20											
21	3. Шляхопроводи										
22	завантажені, що на балансі залізниць.										
23	4. Пішохідні мости*										
24											
25											
26	Примітка: *Пішохідні мости: чисельник - довжина без сходів, знаменник - довжина зі сходами										
27											
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Готово

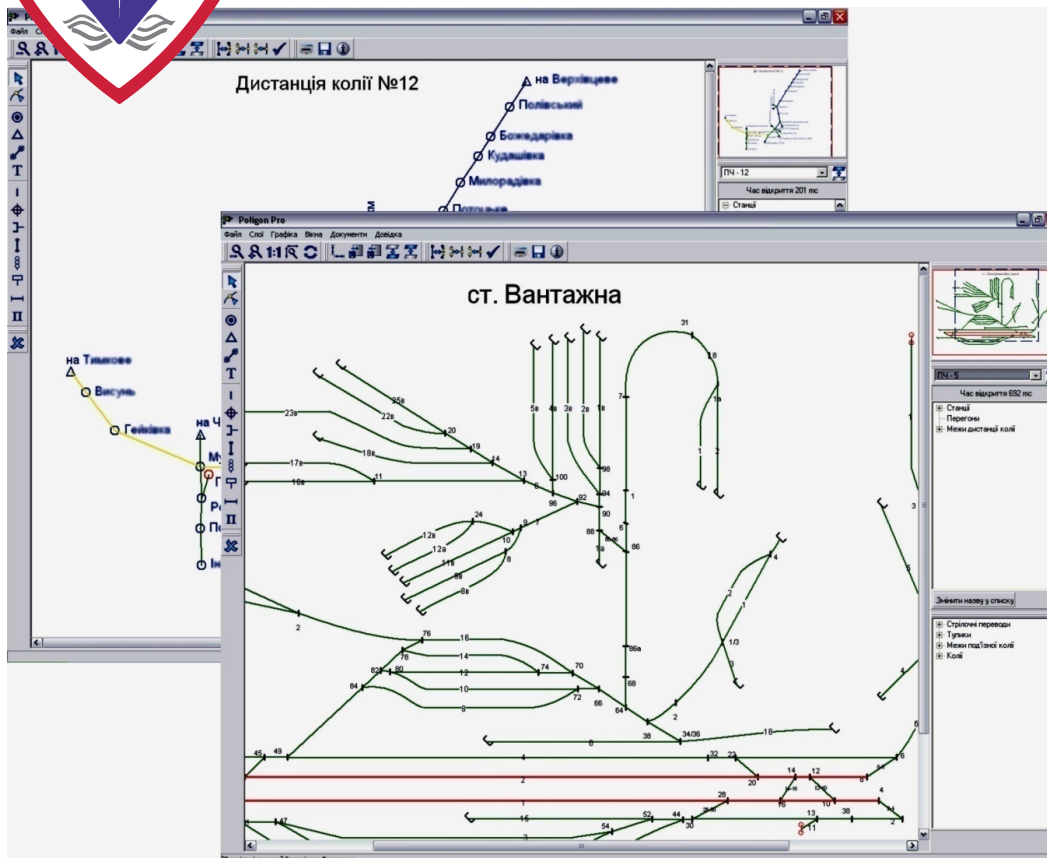
АГУ - 4 (Таблиця 13а) АГУ - 4 (Таблиця 13б) АГУ - 4 (Таблиця 13в) АГУ - 4 (Таблиця 13г) АГУ - 4 (Таблиця 13д)



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# University Profile: Key activities/ Automated management system for bridges and other structures



The automated management system for track facilities enables automated reporting on track facilities and envelops software sets for the calculations of surfacing of tracks in the charts and also automated registration of curve charts, electronic mapping of railway lines, etc.



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# Faculty «Management of Traffic Processes»



Faculty was founded in 1930.

Over the years, the faculty trains specialists in the management of railway operation and transport logistics.

Currently about 500 students study at the faculty.



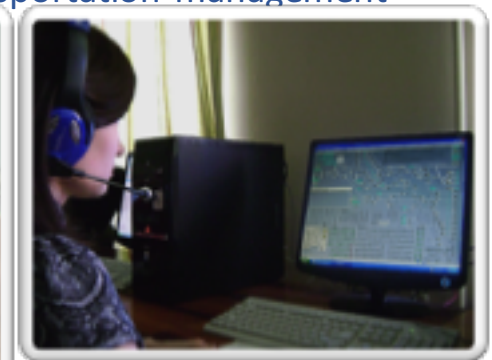
Dean of faculty – Vernigora Roman, PhD

The training of students of the faculty is conducted by two special departments "Management of operational work" and "Transport junctions"

More than 80% of teachers of the faculty departments have academic degrees and titles in the field of transportation management



The learning process includes continuous computer training using specialized software. Practical skills are acquired by students in specialized laboratories equipped with hardware and computer simulators.



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## BA/MA Programs Offered by the Faculty «Management of Traffic Processes»



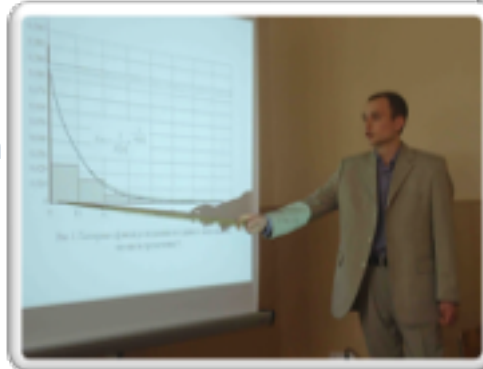
The faculty trains **bachelors and masters** in the field of traffic management and logistics. The term of study for bachelors is **4 years** (240 ECTS), masters - **1.5 years** (90 ECTS)

### Bachelor education programs:

- «Organization of traffic and management on railway transport»
- «Organization of traffic and management on road transport»
- «Freight forwarding and logistics»

### Master's educational programs:

- «Transport technologies in railway transport»
- «Transport technology in road transport»



### Main academic disciplines:

- Cargo work on transport
- Passenger transportation
- Organization of transportation by air and road transport
- Interaction modes of transport
- Transport logistics
- Supply chain management
- Transport infrastructure design
- Transport Law
- International transportation
- Forwarding activities
- Information transport technology



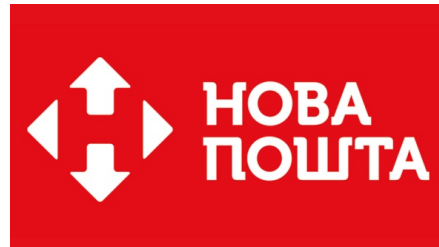
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# Labor market analysis



Металлургтранс



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## Work Group of the Project CRENG



**Created by Rector's order from 29.12.2018 № 696**

**Project Coordinator** - Pshinko O. M., rector of the university.

**Project Manager** - Chernova N. S., Head of International Relations Department.

**Learning Content Development Team:**

**Group Coordinators:**

Bodnar B. E., First Vice-Rector of the University;

Radkevich A.V., Vice-Rector for scientific and pedagogical, economic work, perspective and innovative development of the university.

**Developers of training modules:**

Bal O. M., Ph.D., Head of the Department "Rolling Stock and Track" of Lviv branch of DNURT;

Berezovoy M.I., Ph.D., Head of the Department "Transport Nodes";

Boychenko A.M., Head of the Branch Laboratory "Environmental Protection";

Bozhelarsky Ya.V., Ph.D., Director of Lviv branch of DNURT;



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## Work Group of the Project CRENG



Vernigora R. V., Ph.D., Dean of the Faculty of Management of Transportation Processes;  
Voznyak O.M., Ph.D., associate professor of the Department of Transport Technologies of the Lviv branch of DNURT;  
Gnennyi O.M., Dr.Sc., Head of the Department "Economics and Management";  
Demchenko Ye. B., Ph.D., Associate Professor, Department of Transport Nodes;  
Juss V. S., Ph.D., associate professor of the department "Rolling stock and track" of the Lviv branch of DNURT;  
Dorosh A.S., Ph.D., associate professor of the department "Transport nodes";  
Zukavitskiy I. V., Dr.Sc., Head of the department "Electronic computers";  
Zelenko Yu. V., Dr.Sc., Head of the Department "Chemistry and Engineering Ecology";  
Juss V. S., Ph.D., associate professor of the department "Rolling stock and track" of the Lviv branch of DNURT;  
Kuznetsov V.G., Dr.Sc., Professor of the Department "Intelligent Power Supply Systems";  
Milianich A.R. Ph.D., associate professor of the department "Rolling stock and track" of the Lviv branch of DNURT;  
Okorokov A.M., PhD, Head of the Department "Management of Operations";  
Skalozub V.V., Dr.Sc., Dean of the Faculty of "Technical Cybernetics";  
Soroka M. L., lecturer of the department "Chemistry and engineering ecology";  
Shynkarenko V.I., Dr.Sc., Head of the department "Computer Information Technologies".



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**Thank you for your  
attention!**



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**Dr. Sc., prof. Kuznetsov V., Director of RIIPID**  
**PhD, ass.prof. Chernova N., Head of the IRD**  
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