BASIC INFORMATION:

Organisational Unit	FACULTY OF TRANSPORT AND TRAFFIC ENGINEERING	
Chair	Department of Transport Systems and Logistics	
Course/modul		
Code	2.03.10.03.013.	**Traffic flow theory - advanced program**
ETCS credits	7	

COURSE TYPE:

Functional Area	Professional core
Level of Abstraction	Theoretical and methodological
Course Type - Obligation	Advanced

COURSE REGISTRATION:

Scientific Field	2.	Engineering and technology
Scientific Area	2.11.	Other engineering and technology
Narrow Scientific Field	2.11.06.	Traffic
Scientific subfield	2.11.06.03.	Intelligent traffic systems and logistics

COURSE DESCRIPTION:

Educational goals	Acquiring basic knowledge about traffic flow, characteristics, indicators, laws and procedures for their measurement. Studying the model for expressing the interdependence of the basic parameters on the road and street network. It studies modern information technologies applicable in the form adaptive and information management in order to reduce and prevent congestion and increasing traffic flow.
Competences/ educational outcomes:	After acquiring knowledge in this subject, future engineers will be trained to analyze traffic flow on roads, intersections and road facilities depending on various road parameters and characteristics. Based on this, they will be able to deal with other areas they are studying planning, construction and maintenance of traffic infrastructure i intelligent transport systems in the function of guidance and management traffic flows.

Course content	The movement of an individual vehicle, the basic parameters of the traffic flow, vehicle flow, traffic flow density, traffic flow speed, travel time, unit travel time, tracking intervals vehicles, significant peculiarities of traffic flow, complexity of traffic flow, general traffic conditions, composition and structure of traffic flow, unevenness of vehicle flow, relations and relations between the basic ones traffic flow parameters, empirical and mathematical models for describing traffic flow, speed of waves and shock waves, movement organized groups of vehicles, traffic flow simulation. ITS application models in the function of traffic flow management.

COURSE METRICS:

ETCS	Teaching activities (hours)					Individual work		TOTAL Hours of work
	Contact lessons	Exercises and trainings	Seminar and stud. papers	Pedagogical workshops	Profess. practice	Individual. and group learning	Source research	
7	63	24		40		71	12	210

ACCESS CONDITION

2.12.03.013.	Theory of traffic flow (basic course)

COURSE METHODOLOGY

Lectures, seminar work and consultations.

TEACHING LANGUAGES

English

STUDENT WORK EVALUATION

No.	Type of Evaluation	Partial/ Final	Elective/ Mandatory	Percentage of participation
01	Participation in Lecture Interactions	pre-exam obligation	Mandatory	10 %
02	Seminary work	pre-exam obligation	Mandatory	30 %
03	Exam activities – final test	final	Mandatory	60 %

LITERATURE

No.	Author	Publication Title	Publisher	Edition Year
1.	L. Elefteriadou	An Introduction to Traffic Flow Theory	Springer	2016
2.				