

CURRICULUM

începând cu anul universitar 2018 - 2019

Programul de studii de licență	TRANSPORTS AND TRAFFIC ENGINEERING
Domeniul fundamental	ENGINEERING
Domeniul de licență	TRANSPORTS ENGINEERING
Durata studiilor:	4 YEARS
Forma de învățământ:	FULL TIME (FT)

TRAINING OBJECTIVES AND COMPETENCES

The general objective of the training programme: to create specialists for the design and management of the transport systems, the exploitation and maintenance of the means of transport, able to work in research, design and production.

The specific objectives of the training programme: to teach knowledge and to create the abilities necessary for the acquisition of the following competences.

Professional competences:

C1. To apply the fundamental theoretical and practical engineering knowledge in order to make calculations, demonstrations and applications, the use of software in activities in the field of Transport engineering.

C2. To assess the interdependence between transport and urbanism or spatial planning according to the exigencies of the sustainable mobility – establishing the demand for transport.

C3. To design the technologies in the transport terminals and the operational management of the activities in these terminals, within an integrated approach of the transport systems.

C4. To design the traffic technologies and the operational management of the traffic on the transport infrastructure networks, for local, regional or international transport, within a multimodal approach.

C5. To identify and design the solutions for traffic fluidization and to avoid/diminish road congestion in the transport networks and terminals.

C6. To substantiate the decisions to modernize the transport system technically, economically and financially.

Transversal competences:

CT1 - To apply the values and ethics of the profession of engineer and to fulfill the professional tasks responsibly under the circumstances of diminished autonomy and qualified assistance. To promote the convergent and divergent logical experiment, the practical applicability, the assessment and self-assessment in making decisions. *To fulfill the professional tasks responsibly.*

CT2 - To perform the activities and the roles characteristic of team work on different hierarchical layers. To promote initiative, dialogue, cooperation, positive attitude and respect, diversity and multiculturalism and to continuously improve the activity. *Communication and team work.*

CT3 - To self-assess the need for professional training objectively in order to integrate on the labour market and to adapt to the dynamics of its requirements and to achieve personal and professional development. The efficient use of the language abilities and the knowledge of the information and communication technology. *Awareness of the long-life training for professional development.*

Rector,

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STUDY PLAN
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No.	FIRST YEAR	Courses code	Course type	Semester 1				Semester 2				Credit points		Ei, Ci, Vi		No. of hours per discipline			Hours for individual study	Total of hours	
	Courses			C	S	L	P	C	S	L	P	Sem.1	Sem.2	Sem.1	Sem.2	Class	Apl.	Total			
1	Mathematical analysis	2TT1OF01	F	2	2							5		E1		28	28	56	69	125	
2	Chemistry	2TT1OF02	F	2		2						4		C1		28	28	56	44	100	
3	English language I	2TT1AX03	X		2							3		C1		0	28	28	47	75	
4	Descriptive geometry	2TT1OF04	F	1		2						3		C1		14	28	42	33	75	
5	Applied Informatics I	2TT1OF05	F	2		2						5		E1		28	28	56	69	125	
6	Materials science and engineering	2TT1OD06	D	2		2						4		E1		28	28	56	44	100	
7	Mechanics	2TT1OD07	D	2	2	1						5		E1		28	42	70	55	125	
8	Physical education and sport I	2TT1OX08	X		2							1		A/R		0	28	28	0	28	
9	Algebra, analytical and differential geom.	2TT2OF09	F					2	2				5		E2	28	28	56	69	125	
10	Physics	2TT2OF10	F					2		2			4		C2	28	28	56	44	100	
11	Technical Drawing	2TT2OF11	F					2		2			4		C2	28	28	56	44	100	
12	Applied Informatics II	2TT2OF12	F					2		2			5		E2	28	28	56	69	125	
13	Economic analysis of transports	2TT3OD13	D					2	2				3		C2	28	28	56	44	100	
14	Materials technology	2TT2OD14	D					2		2			5		E2	28	28	56	44	100	
15	Optional course 12 (foreign lang.)	2TT2AX15	X						2				3		C2	0	28	28	47	75	
16	Physical education and sport II	2TT2OX16	X						2				1		A/R	0	28	28	0	28	
TOTAL FIRST YEAR				11	8	9	0	12	8	8	0	30	30	8E+6C	322	462	784	722	1506		
												60									

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No.	SECOND YEAR	Courses code	Course type	Semester 1				Semester 2				Credit points		Ei, Ci, Vi		No. of hours per discipline			Hours for individual study	Total of hours	
	Courses			C	S	L	P	C	S	L	P	Sem.1	Sem.2	Sem.1	Sem.2	Class	Apl.	Total			
17	Thermotechnics and thermal machines	2TT3OD17	D	2		2						4		E3		28	28	56	44	100	
18	Strength of materials	2TT3OD18	D	2	2	1						5		E3		28	42	70	55	125	
19	Optional course OP 21	2TT4AF19	F	2		2						5		E3		28	28	56	69	125	
20	Infographics (CAD) I	2TT3OF20	F	2		2						5		C3		28	28	56	69	125	
21	Mechanisms	2TT2OD21	D	2		2	1					5		E3		28	42	70	55	125	
22	History of Technology and Science	2TT3AX22	X	2	1							3		C3		28	14	42	33	75	
23	Optional course 22 (foreign lang. 3)	2TT3AX23	X		2							2		C3		0	28	28	47	75	
24	Physical education and sport III	2TT3OX24	X		1							1		A/R		0	14	14	0	14	
25	Informatics in transports	2TT3OD25	D					2		2			3		E4	28	28	56	19	75	
26	Machine parts	2TT4OD26	D					2		2	1		4		E4	28	42	70	30	100	
27	Infographics (CAD) II	2TT4OF27	F					1		2			4		E4	14	28	42	58	100	
28	Means of transportation	2TT5OD28	D					2		2			3		C4	28	28	56	19	75	
29	Internal combustion engines	2TT5OD29	D					2		2			4		E4	28	28	56	44	100	
30	Risk asses. and insurance in transp.	2TT4OS30	S					2	1				3		C4	28	14	42	33	75	
31	Optional course 23 (foreign lang. 3)	2TT4AX31	X						2				2		C4	0	28	28	47	75	
32	Optional course OP 24	2TT4AX32	X					1	1				2		C4	14	14	28	47	75	
33	Physical education and sport IV	2TT4OX33	X						1				1		A/R	0	14	14	0	14	
34	Practical training, I, 30x3 hours/week	2TT4OD34	D										4		C4	0	90	90	0	90	
TOTAL SECOND YEAR				12	6	9	1	12	5	10	1	30	30	8E+8C	336	538	874	669	1543		
												60									

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No.	THIRD YEAR	Courses code	Course type	Semester 1				Semester 2				Credit points		Ei, Ci, Vi		No. of hours per discipline			Hours for individual study	Total of hours
				C	S	L	P	C	S	L	P	Sem.1	Sem.2	Sem.1	Sem.2	Class	Apl.	Total		

No.	THIRD YEAR	Courses code	Course type	Semester 1				Semester 2				Credit points		Ei, Ci, Vi		No. of hours per discipline			individual study	hours	
	Courses			C	S	L	P	C	S	L	P	Sem.1	Sem.2	Sem.1	Sem.2	Class	Apl.	Total			
35	Vehicle dynamics	2TT5OS35	S	2			2					5		E5		28	28	56	69	125	
36	Electrotechnics and electrical machinery	2TT4OD36	D	2		2						4		E5		28	28	56	44	100	
37	Fluid mechanics and hydraulic machines	2TT4OF37	D	3	1	1						5		E5		42	28	70	55	125	
38	Multimodal Transport	2TT5OD38	D	2	1							4		E5		28	14	42	58	100	
39	Multimodal Transport - project	2TT5OD39	D				1					3		C5		0	14	14	61	75	
40	Optional course OP 31	2TT5AD40	D	2	1							3		C5		28	14	42	33	75	
41	Road Transport Code and legislation	2TT5OS41	S	2	1							3		C5		28	14	42	33	75	
42	Geography of transports Reliability and maintena	2TT5OS42	S	2	1							3		C5		28	14	42	33	75	
43	Merchandise handling equipment	2TT6OD43	D					3	1		1		5		E6	42	28	70	55	125	
44	Road transport systems	2TT6OS44	S					3	1				4		E6	42	14	56	44	100	
45	Road transport systems - project	2TT6OS45	S								2		2		C6	0	28	28	22	50	
46	Railway transport systems	2TT6OS46	S					3	1				5		E6	42	14	56	69	125	
47	Computer Aided Design in transports	2TT6OD47	D					3		1			4		E6	42	14	56	44	100	
48	Traffic control and command devices	2TT6OD48	D					2		2			3		C6	28	28	56	19	75	
49	GIS/GPS Systems	2TT6OS49	S					2		1			3		C6	28	14	42	33	75	
50	Practical training, II, 30x3 hours/week	2TT6OS50	S										4		C6	0	90	90	0	90	
TOTAL THIRD YEAR				15	5	3	3	16	3	4	3	30	30	8E+8C	434	384	818	672	1490		
												60									

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No.	FOURTH YEAR	Courses code	Course type	Semester 1				Semester 2				Credit points		Ei, Ci, Vi		No. of hours per discipline			Hours for individual study	Total of hours
	Courses			C	S	L	P	C	S	L	P	Sem.1	Sem.2	Sem.1	Sem.2	Class	Apl.	Total		
51	Urban transport systems	2TT7OS51	S	2	1	1						5		C7		28	28	56	69	125
52	Reliability of transport systems	2TT7OS52	S	2	1	1						5		C7		28	28	56	69	125
53	Traffic analysis	2TT7OS53	S	2		2						5		E7		28	28	56	69	125

54	Transport terminals and technologies	2TT7OD54	D	3	1		2					6		E7		42	42	84	66	150	
55	Optional course OP 41	2TT7AS55	S	2	1	1						4		C7		28	28	56	44	100	
56	Transportation infrastructure	2TT7OS56	S	3	1							5		E7		42	14	56	69	125	
57	Special transport systems	2TT8OS57	S					3		1	1			E8		42	28	70	55	125	
58	Transportation emission control	2TT8OS58	S					2	2					E8		28	28	56	44	100	
59	Optional course OP 42	2TT8AS59	S					3		2				E8		42	28	70	55	125	
60	Optional course OP 43	2TT8AS60	S					2	1					C8		28	14	42	33	75	
61	Industrial transport	2TT8OS61	S					3	1	1				E8		42	28	70	30	100	
62	Practical training for elab. of grad. paper	2TT8OS62	S											C8		0	60	60	65	125	
63	Elaboration of graduation paper	2TT8OS63	S								4			C8			56	56	69	125	
TOTAL FOURTH YEAR				14	5	5	2	13	4	4	5	30	30	7E+6C	378	410	788	737	1525		
												60									
For the pass of the diploma exam, additional 10 credits are awarded																					

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Optional courses					
Nr. crt.	Courses code	Year of study	Courses		
15	OP12	I	English Language	French Language	Spanish language
19	OP21	II	Numerical methods		Special Mathematics
23	OP22	II	English Language	French Language	Spanish language
31	OP23	II	English Language	French Language	Spanish language
32	OP 24	II	Ethics and academic integrity		Environment protection
40	OP31	III	Transports logistics		Management and marketing in transports
55	OP41	IV	Auxiliary systems of transportation means		Unconventional propulsion systems
59	OP42	IV	Road accident analysis		Traffic security and safety
60	OP43	IV	Transportation economy		Durable development in transports

Facultative courses																				
No.	Courses	Cod uscipi.	Year of study	Semester 1				Semester 2				Credit points		Ei, Ci, Vi		No. of hours per discipline			Hours for individual study	Total of hours
				C	S	L	P	C	S	L	P	Sem.1	Sem.2	Sem.1	Sem.2	Cours	Apl.	Total		
63	General economy	2TT4LX63	II					2	1				3		C4	28	14	42	33	75
64	Mechatronics	2TT5LS64	III	2		2						3		C5		28	28	56	19	75
65	Creativity and inventiveness	2TT5LD65	III	2		1						3		C5		28	14	42	33	75
66	Road infrastructure	2TT6LS66	III					1		1			2		C6	14	14	28	22	50
67	Foreign languages 5	2TT6LX67	III						2				2		C6	0	28	28	22	50
68	Underground transportation equipm.	2TT7LS68	IV	2		2						3		C7		28	28	56	19	75
69	Project management	2TT7LX69	IV	1	1							2		C7		14	14	28	22	50
70	Transportation in quarries	2TT8LS70	IV					2		2			3			28	28	56	19	75
71	Quality in transports	2TT8LS71	IV					1	1				2			14	14	28	22	50

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DISTRIBUTION OF HOURS BY SUBJECT GROUPS					
Total course hours :	1470				
Total hours of applications :	1794				
Total teaching hours:	3264				
Total teaching hours / Total hours (%) :	3264	/	3264	x 100	100,00
Total hours of applications / Total hours (%) :	1794	/	3264	x 100	54,96
Total course hours / Total hours of applications (%) :	1470	/	1794	x 100	81,94
SUBJECTS GRUP		No. hours		No. Hours/Total hours (%)	
Fundamental subjects F		588		18,01	
Engineering subjects in the field D		1252		38,36	
Specialized technical subjects S		1158		35,48	
Complementary subjects	Physical education and sport	266	84	8,15	
	Economic and humanistic subjects		154		
TOTAL		exce		100,00	
Required subjects		2886		88,42	
Optional subjects		378		11,58	
Optional subjects		364		11,15	

Comments: For 1 credit point of the discipline 25 hours are granted for the didactic preparation and individual study of the student.

Caption: 2 - Faculty: Mechanical and Electrical Engineering; **B** - industrial engineering; **B** - Machine Building Technology;

F - fundamental discipline; **D** - domain discipline; **S** - specialized discipline; **X** - complementary discipline; **A** - optional discipline; **C** - class; **S** - seminar;

L - laboratory; **P** - project; **Ex.(E_{1...8})** - exam held in the semester 1...8; **Cv.(C_{1...8})** - colloquium held in the semester 1...8, **A/R** - PASS / FAIL.

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