Recomended pass through the study plan

Name of the pass: Master Full-Time DS from 2024/25

Faculty/Institute/Others:
Department:
Pass through the study plan: Master Full-Time DS from 2024/25
Branch of study guranteed by the department: Welcome page
Guarantor of the study branch:
Program of study: Transportation Systems and Technology
Type of study: Follow-up master full-time
Note on the pass:

Coding of roles of courses and groups of courses:
P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):
KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
14GISS	**Geographical Information Systems** *Vít Fábera, František Kekula, Tomáš Janata, Zuzana Purkrábková **Tomáš Janata** Tomáš Janata (Gar.)*	KZ	2	0P+2C+8B	Z	Z
18GAZ	**Geomechanics and Foundation Engineering** *Jitka Řezníčková, Linda Černá Vydrová, Vít Malinovský **Linda Černá Vydrová** Linda Černá Vydrová (Gar.)*	Z,ZK	3	2P+1C	Z	Z
12IKD	**Rail Transport Infrastructure** *Lukáš Týfa, Ondřej Trešl*	Z,ZK	5	2P+2C	Z	Z
15J2A1	**Language - English 1** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová*	Z	2	0P+2C+10B	Z	Z
22MSV	**Modelling and Vehicle Movement Simulation** *Michal Frydrýn, Drahomír Schmidt **Michal Frydrýn** Drahomír Schmidt (Gar.)*	KZ	2	0P+2C	Z	Z
18TIK	**Theory of Engineering Structures** *Petr Koudelka, Petr Zlámal, Ondřej Jiroušek, Ján Kopačka **Ondřej Jiroušek** Ondřej Jiroušek (Gar.)*	Z,ZK	4	2P+1C	Z	ZP
12TKVP	**Highway Engineering Materials** *Otakar Vacín*	Z,ZK	4	2P+2C	Z	Z
15JCZ1	**Czech Language for Foreign Students 1** *Irena Veselková*	Z	0	0P+2C	Z	Z
X2-NP-DS-20/21	**Projekty Mgr. prezenční DS od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
1S-NP-DS-V1-22/23	**1. sem. Mgr. prezenční DS výběr předmětu od 2022/23** *17DOPD,17TZND*	Min. cours. 1 Max. cours. 1	Min/Max 4/4			Z
JZ-NP-DS-20/21	**Jazyky Mgr. prezenční DS od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J

Number of semester: 2

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
22AMMD	**Measuring Methods Applied to Transportation** *Michal Frydrýn, Drahomír Schmidt, Luboš Nouzovský, Zdeněk Svatý, Tomáš Mičunek* ***Luboš Nouzovský*** *Tomáš Mičunek (Gar.)*	KZ	4	1P+3C	L	Z
15JBA2	**Language - English 2** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, ...*	Z	2	0P+2C+10B	L	Z
12NAPI	**Design and Maintenance of Transportation Structures** *Gabriela Sidorinová, Otakar Vacín*	Z,ZK	4	2P+2C	L	Z
16PDP	**Principles of Vehicle Design** *Jaroslav Machan, Jan Leistner, Filip Kotas, David Lehet Jaroslav Machan (Gar.)*	ZK	2	2P+0C+8B	L	Z
12UMUP	**Sustainable Mobility and Land - Use Planning** *Dagmar Kočárková, Václav Novotný Dagmar Kočárková (Gar.)*	Z,ZK	5	2P+2C	L	ZP
12ZSUZ	**Railway Stations and Centres** *Ondřej Trešl, Martin Jacura, Tomáš Javořík*	Z,ZK	3	2P+1C	L	Z
15JCZ2	**Czech Language for Foreign Students 2** *Irena Veselková*	Z	0	0P+2C	L	Z
X2-NP-DS-20/21	**Projekty Mgr. prezenční DS od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
2S-NP-DS-V-20/21	**2. sem. Mgr. prezenční DS výběr předmětu od 2020/21** *12BED,18TEAM*	Min. cours. 1 Max. cours. 1	Min/Max 4/4			Z
JZ-NP-DS-20/21	**Jazyky Mgr. prezenční DS od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J

Number of semester: 3

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
15JCZ3	**Czech Language for Foreign Students 3** *Irena Veselková*	Z		0P+2C	Z	ZP
12DAZP	**Transport and Environment** *Kristýna Neubergová, Tomáš Javořík*	Z,ZK	4	2P+1C	Z	Z
15JBA3	**Language - English 3** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, ...*	Z	2	0P+2C+10B	Z	J
11STS	**Stochastic Systems** *Evženie Uglickich, Šárka Voráčová, Natálie Blahitka, Michal Matowicki, Pavla Pecherková* ***Pavla Pecherková*** *Šárka Voráčová (Gar.)*	Z,ZK	4	2P+2C+14B	Z	PV
12TEAP	**Theory of Road Traffic Operation** *Zuzana Čarská, Vladimír Faltus*	Z,ZK	7	3P+2C	Z	V
12VRZ	**High Speed Rail Transport** *Lukáš Týfa*	KZ	3	2P+0C	Z	
X2-NP-DS-20/21	**Projekty Mgr. prezenční DS od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-DS-20/21	**Jazyky Mgr. prezenční DS od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J

Number of semester: 4

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
15JCZ4	**Czech Language for Foreign Students 4** *Irena Veselková*	Z		0P+2C	L	Z
15JBA4	**Language - English 4** *Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Markéta Musilová, Jan Feit, Eva Rezlerová, ...*	ZK	2	0P+2C+10B	L	ZP
X2-NP-DS-20/21	**Projekty Mgr. prezenční DS od 2020/21** *11XN1,12XN1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-DS-20/21	**Jazyky Mgr. prezenční DS od 2020/21** *15J2F1,15J2I1,..... (see the list of groups below)*	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J

List of groups of courses of this pass with the complete content of members of individual groups

Kód	Name of the group of courses and codes of members of this group (for specification see here or below the list of courses)	Completion	Credits	Scope	Semester	Role
1S-NP-DS-V1-22/23	**1. sem. Mgr. prezenční DS výběr předmětu od 2022/23**	**Min. cours. 1** **Max. cours. 1**	**Min/Max** 4/4			**Z**

17DOPD	Transportation Planning and Mode ...	17TZND	Technology of Railway Transport		

2S-NP-DS-V-20/21	**2. sem. Mgr. prezenční DS výběr předmětu od 2020/21**	**Min. cours. 1** **Max. cours. 1**	**Min/Max** 4/4

12BED	Road Safety Audit	18TEAM	Theoretical and Applied Mechanic ...		

JZ-NP-DS-20/21	**Jazyky Mgr. prezenční DS od 2020/21**	**Min. cours. 4** **Max. cours. 4**	**Min/Max** 8/8

15J2F1	Language - French 1	15J2I1	Language - Italian 1	15J2N1	Language - German 1
15J2R1	Language - Russian 1	15J2S1	Language - Spanish 1	15JBF2	Language - French 2
15JBI2	Language - Italian 2	15JBN2	Language - German 2	15JBR2	Language - Russian 2
15JBS2	Language - Spanish 2	15JBF3	Language - French 3	15JBI3	Language - Italian 3
15JBN3	Language - German 3	15JBR3	Language - Russian 3	15JBS3	Language - Spanish 3
15JBF4	Language - French 4	15JBI4	Language - Italian 4	15JBN4	Language - German 4
15JBR4	Language - Russian 4	15JBS4	Language - Spanish 4		

X2-NP-DS-20/21	**Projekty Mgr. prezenční DS od 2020/21**	**Min. cours. 4** **Max. cours. 4**	**Min/Max** 13/13

11XN1	Master Project 1	12XN1	Master Project 1	14XN1	Master Project 1
15XN1	Master Project 1	16XN1	Master Project 1	17XN1	Master Project 1
18XN1	Master Project 1	20XN1	Master Project 1	21XN1	Master Project 1
22XN1	Master Project 1	23XN1	Master Project 1	11XN2	Master Project 2
12XN2	Master Project 2	14XN2	Master Project 2	15XN2	Master Project 2
16XN2	Master Project 2	17XN2	Master Project 2	18XN2	Master Project 2
20XN2	Master Project 2	21XN2	Master Project 2	22XN2	Master Project 2
23XN2	Master Project 2	11XN3	Master Project 3	12XN3	Master Project 3
14XN3	Master Project 3	15XN3	Master Project 3	16XN3	Master Project 3
17XN3	Master Project 3	18XN3	Master Project 3	20XN3	Master Project 3
21XN3	Master Project 3	22XN3	Master Project 3	23XN3	Master Project 3
11XN4	Master Project 4	12XN4	Master Project 4	14XN4	Master Project 4
15XN4	Master Project 4	16XN4	Master Project 4	17XN4	Master Project 4

18XN4	Master Project 4	20XN4	Master Project 4	21XN4	Master Project 4
22XN4	Master Project 4	23XN4	Master Project 4		

List of courses of this pass:

Code	Name of the course	Completion	Credits
11STS	Stochastic Systems	Z,ZK	4
The subject deals with the problems of mathematical modelling of dynamical systems, estimation od these models and their utilization for prediction. The results are illustrated on practical transportation tasks. Mathematical theory roots from probability and mathematical statistics and they use the methods of the Bayesian probabilistic approach.			
11XN1	Master Project 1	Z	2
11XN2	Master Project 2	Z	2
11XN3	Master Project 3	Z	1
11XN4	Master Project 4	Z	8
12BED	Road Safety Audit	Z,ZK	4
Schedules of applications of safety assessments (especially Road Safety Audit, Road Safety Inspection) during the process of preparations, and of the particular realization of the road network that should minimize traffic accident risks for all those who take part in road traffic. Application of European Directive 2008/96/EC on road safety infrastructure management.			
12DAZP	Transport and Environment	Z,ZK	4
This course aims the impact of transport on environment. The accent is put mainly on noise and vibration, emission, barrier effect and energy demands. The noise measury is part and parcel of this course.			
12IKD	Rail Transport Infrastructure	Z,ZK	5
Non-compensated lateral acceleration, parameters eduction for transition curve and cant transition, curves without straight, track spacing change. Track detailed construction. Substructure design, slab track. Tram-train. Interoperability. Noise precautions. Railway line modernization for non-tilting and tilting trains.			
12NAPI	Design and Maintenance of Transportation Structures	Z,ZK	4
Design and construction of cement-concrete pavements and their maintenance. Construction of bridge objects, examples and choice of bridge construction materials. Construction and operation of tunnels.			
12TEAP	Theory of Road Traffic Operation	Z,ZK	7
Traffic parameters and their measurement, acquisition and processing. Road capacity analysis. Theoretical foundations and applications of mathematical models - macroscopic, statistical and microscopic traffic models. Theory of traffic management. Traffic light signals, roundabouts, coordination, public transport priority. Urban and highway management. Traffic excesses management. Road assessment and maintenance methods. Health risks assessment.			
12TKVP	Highway Engineering Materials	Z,ZK	4
The theory of road construction - Material Aspects. The course emphasizes the development of road construction from the beginning of the 20th century to the present, focusing on materials, understanding the production and placing of asphalt mixtures.			
12UMUP	Sustainable Mobility and Land - Use Planning	Z,ZK	5
Spatial planning - objectives and tasks, development over time. Land-use planning tools. SUMP. Territorial and transport planning context. Ways of urban growth in connection with transport. Basic principles of the transport solution. The impact of transport on the size and shape of the city, on the development of the street and the square and the roads. Solutions for pedestrian and bicycle transport. Suburbanization and transport. City economics.			
12VRZ	High Speed Rail Transport	KZ	3
High speed railway (HSR) transport characteristics and position in transportation system. Types / models of HSR systems, preparation of high speed railway lines building in the Czech Republic conditions. Non-adhesion HSR systems. City and region traffic service by HSR. HSR operating points. HSR worldwide network. HSR routing and traffic conception. Specifics of HSR track construction and layout track parameteres.			
12XN1	Master Project 1	Z	2
12XN2	Master Project 2	Z	2
12XN3	Master Project 3	Z	1
12XN4	Master Project 4	Z	8
12ZSUZ	Railway Stations and Centres	Z,ZK	3
Equipment for passenger transport. Platform construction. Access roads to platforms. Modification of railway stations according to the TSI PRM. Station heads design. Variant solutions of station heads for current ride. Junction stations. Crossing stations. Passenger stations. Moving stations. Public transport terminals.			
14GISS	Geographical Information Systems	KZ	2
Construction of saving format of space-oriented information land-survey and cartography minimum basic tasks of spatial operations principles of territorial identification			
14XN1	Master Project 1	Z	2
14XN2	Master Project 2	Z	2
14XN3	Master Project 3	Z	1
14XN4	Master Project 4	Z	8
15J2A1	Language - English 1	Z	2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.			
15J2F1	Language - French 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15J2I1	Language - Italian 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			

15J2N1	Language - German 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15J2R1	Language - Russian 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15J2S1	Language - Spanish 1	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBA2	Language - English 2	Z	2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.			
15JBA3	Language - English 3	Z	2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Optional courses for certificates FCE, CAE.			
15JBA4	Language - English 4	ZK	2
Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement.Optional courses for certificates FCE, CAE.			
15JBF2	Language - French 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBF3	Language - French 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBF4	Language - French 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBI2	Language - Italian 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBI3	Language - Italian 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBI4	Language - Italian 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBN2	Language - German 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBN3	Language - German 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBN4	Language - German 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBR2	Language - Russian 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			
15JBR3	Language - Russian 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBR4	Language - Russian 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBS2	Language - Spanish 2	Z	2
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Developing perceptive and communicative skills, feedback skills, summarising technical text content, structuring presentations and meeting minutes, elementary rhetorics of foreign language and practical application, formal and technical registers and their use, language of management.			

15JBS3	Language - Spanish 3	Z	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JBS4	Language - Spanish 4	ZK	2
Grammar and stylistics. Selection of conversation and professional topics based on the language level and study focus at the Faculty. Improvement of language structure knowledge and perceptive and communicative skills, vocabulary development. Basic stylistic forms. Presentation of own knowledge in oral and written form. Work with (professional) text and its features. Practice of oral and written presentation.			
15JCZ1	Czech Language for Foreign Students 1	Z	0
Basic structures of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czech language, writing skills.			
15JCZ2	Czech Language for Foreign Students 2	Z	0
Basic structures of Czech language, common communication situations, study, work, leisure time activities, introduction of myself, phonetics of Czech language, writing skills.			
15JCZ3	Czech Language for Foreign Students 3	Z	
Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.			
15JCZ4	Czech Language for Foreign Students 4	Z	
Language structures with regard to the group level. Listening and oral fluency drill. Basic terminology.			
15XN1	Master Project 1	Z	2
15XN2	Master Project 2	Z	2
15XN3	Master Project 3	Z	1
15XN4	Master Project 4	Z	8
16PDP	Principles of Vehicle Design	ZK	2
Design of transportation vehicle according to its usage and function. Marketing and user demands. Vehicle dynamics. Propulsion systems. Design process, functional design and vehicle structure. Evaluation of variant concepts. Design phases. Realiability, technological aspects etc.			
16XN1	Master Project 1	Z	2
16XN2	Master Project 2	Z	2
16XN3	Master Project 3	Z	1
16XN4	Master Project 4	Z	8
17DOPD	Transportation Planning and Modeling	Z,ZK	4
Basic steps and tools used within four step model (trip generation, trip distribution, mode choice and trip distribution). Mobility and availability in urban areas, land use. New trends for transportation planning and modelling.			
17TZND	Technology of Railway Transport	Z,ZK	4
Track line capacity assesment, model operational situation with a system running time between IPT-nodes, calculation of traction energy savings compared with infrastructure costs for designing of fleeting crossing station, solving of capacity problem and blocking time in relation to train protection system, robustness of timetable, system concept of freight train paths, guidelines for centralised operational traffic control and management.			
17XN1	Master Project 1	Z	2
17XN2	Master Project 2	Z	2
17XN3	Master Project 3	Z	1
17XN4	Master Project 4	Z	8
18GAZ	Geomechanics and Foundation Engineering	Z,ZK	3
Geology (basics of pertrographyand stratigraphy), mechanics of soils (classification of fundamental soils, mechanic properties of fundamental soils, permeability), planar foundations (footings, footers, plates, depth of founding), determination of planar foundations bearing and deformation, depth foundations classification of depth foundations elements, examples of their use, piles (classification, technology od performing).			
18TEAM	Theoretical and Applied Mechanics	Z,ZK	4
Fundamentals of theory of plasticity. Plasticity conditions. Elastoplastic and plastic states of cross-sections and beams. Reliability and durability of structures. The stress and strain state around a notch. Stress intensity factor. Fracture toughness. Energy methods of linear fracture mechanics. Crack driving force.			
18TIK	Theory of Engineering Structures	Z,ZK	4
The course builds upon the knowledge gained in basic mechanics courses in bachelor study (especially Statics and Elasticity) in the field of mathematical theory of elasticity. Emphasis is placed on plane and axisymmetric problems, as well as on the calculation of stress and strain in plates and shells. Students are further acquainted with methods of modeling the behavior of subsoil used in the design of line structures.			
18XN1	Master Project 1	Z	2
18XN2	Master Project 2	Z	2
18XN3	Master Project 3	Z	1
18XN4	Master Project 4	Z	8
20XN1	Master Project 1	Z	2
20XN2	Master Project 2	Z	2
20XN3	Master Project 3	Z	1
20XN4	Master Project 4	Z	8
21XN1	Master Project 1	Z	2
21XN2	Master Project 2	Z	2
21XN3	Master Project 3	Z	1
21XN4	Master Project 4	Z	8
22AMMD	Measuring Methods Applied to Transportation	KZ	4
Geodetic location and technical processing of traffic route with geodetic total station, GPS and photogrammetry, 3D scanning. Transport corridor setting out using geodetic methods. Detection and technical processing of several vehicle dynamic characteristics using high-speed cameras and accelerometers. It is a week course and the terms are usually set in June and September - usually in examination period.			
22MSV	Modelling and Vehicle Movement Simulation	KZ	2
Principles and posibilities of simulation tools with regards to vehicle movement analysis and vehicle crash analysis. Kinematic and dynamic modelling of vehicle/set of vehicles movement. View conditions. Proposed road space passage. Processing of road 3D models.			

22XN1	Master Project 1	Z	2
22XN2	Master Project 2	Z	2
22XN3	Master Project 3	Z	1
22XN4	Master Project 4	Z	8
23XN1	Master Project 1	Z	2
23XN2	Master Project 2	Z	2
23XN3	Master Project 3	Z	1
23XN4	Master Project 4	Z	8

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