

Recommended pass through the study plan

Name of the pass:

Faculty/Institute/Others:

Department:

Pass through the study plan: Master Full-Time DS from 2024/25

Branch of study guaranteed 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
614GISS	Geographical Information Systems Zuzana Purkrábková, František Kekula	KZ	2	0P+2C+8B	Z	z
618GAZ	Geomechanics and Foundation Engineering Vít Malinovský Vít Malinovský (Gar.)	Z,ZK	3	2P+1C	Z	z
612IKD	Rail Transport Infrastructure Tomáš Javořík	Z,ZK	5	2P+2C	Z	z
615J2A1	Language - English 1 Karolína Beauxisová, Jan Feit	Z	2	0P+2C+10B	Z	z
622MSV	Modelling and Vehicle Movement Simulation Drahomír Schmidt, Michal Frydrýn Michal Frydrýn Drahomír Schmidt (Gar.)	KZ	2	0P+2C	Z	z
618TIK	Theory of Engineering Structures Ján Kopačka Josef Kocourek (Gar.)	Z,ZK	4	2P+1C	Z	zP
612TKVP	Highway Engineering Materials Gabriela Sidorinová	Z,ZK	4	2P+2C	Z	z
X2-NP-DS-24/25-DC	Projekty Mgr. prezenční DS od 2024/25 622XN1,621XN1,..... (see the list of groups below)	Min. cours. 4 Max. cours. 4	Min/Max 13/13			zP
1S-NP-DS-V1-24/25-DC	1. sem. Mgr. prezenční DS výběr p edm tu od 2024/25 617DOPD,617TZND	Min. cours. 1 Max. cours. 1	Min/Max 4/4			z
JZ-NP-DS-24/25-DC	Jazyky Mgr. prezenční DS od 2024/25 615J2F1,615JBF2,..... (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
622AMMD	Measuring Methods Applied to Transportation Drahomír Schmidt, Michal Frydrýn, Tomáš Mišunek, Luboš Nouzovský, Zdeněk Svatoš Luboš Nouzovský Tomáš Mišunek (Gar.)	KZ	4	1P+3C	L	z
615JBA2	Language - English 2 Karolína Beauxisová, Jan Feit, Věra Pastorková	Z	2	0P+2C+10B	L	z
612NAPI	Design and Maintenance of Transportation Structures Gabriela Sidorinová Josef Kocourek (Gar.)	Z,ZK	4	2P+2C	L	z

616PDP	Principles of Vehicle Design <i>Jaroslav Machan, Jan Leistner Josef Kocourek (Gar.)</i>	ZK	2	2P+0C+8B	L	Z
612UMUP	Sustainable Mobility and Land - Use Planning <i>Dagmar Koárková Josef Kocourek (Gar.)</i>	Z,ZK	5	2P+2C	L	ZP
612ZSUZ	Railway Stations and Centres <i>Tomáš Javoík, Martin Jacura Josef Kocourek (Gar.)</i>	Z,ZK	3	2P+1C	L	Z
X2-NP-DS-24/25-DC	Projekty Mgr. prezen ní DS od 2024/25 <i>622XN1,621XN1,..... (see the list of groups below)</i>	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
2S-NP-DS-V1-24/25-DC	2. sem. Mgr. prezen ní DS výb r p edm tu od 2024/25 <i>612BED,618TEAM</i>	Min. cours. 1 Max. cours. 1	Min/Max 4/4			Z
JZ-NP-DS-24/25-DC	Jazyky Mgr. prezen ní DS od 2024/25 <i>615J2F1,615JBF2,..... (see the list of groups below)</i>	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J
Y2-NP-DS-24/25-DC	PVP-B Mgr. prezen ní DS od 2024/25 <i>612Y2KS,612Y2MD</i>	Min. cours. 3 Max. cours. 3	Min/Max 6/6			PV

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
612DAZP	Transport and Environment <i>Josef Kocourek (Gar.)</i>	Z,ZK	4	2P+1C	Z	Z
615JBA3	Language - English 3 <i>Jan Feit</i>	Z	2	0P+2C+10B	Z	Z
611STS	Stochastic Systems <i>Pavla Pecherková Evženie Uglickich (Gar.)</i>	Z,ZK	4	2P+2C+14B	Z	ZP
612TEAP	Theory of Road Traffic Operation <i>Josef Kocourek (Gar.)</i>	Z,ZK	7	3P+2C	Z	Z
612VRZ	High Speed Rail Transport <i>Josef Kocourek (Gar.)</i>	KZ	3	2P+0C	Z	Z
X2-NP-DS-24/25-DC	Projekty Mgr. prezen ní DS od 2024/25 <i>622XN1,621XN1,..... (see the list of groups below)</i>	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
3S-NP-DS-V1-25/26-DC	3. sem. Mgr. prezen ní DS výb r p edm tu od 2025/26 <i>612IDOS,616STK</i>	Min. cours. 1 Max. cours. 1	Min/Max 3/3			Z
JZ-NP-DS-24/25-DC	Jazyky Mgr. prezen ní DS od 2024/25 <i>615J2F1,615JBF2,..... (see the list of groups below)</i>	Min. cours. 4 Max. cours. 4	Min/Max 8/8			J
Y2-NP-DS-24/25-DC	PVP-B Mgr. prezen ní DS od 2024/25 <i>612Y2KS,612Y2MD</i>	Min. cours. 3 Max. cours. 3	Min/Max 6/6			PV

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
615JBA4	Language - English 4	ZK	2	OP+2C+10B	L	Z
XD-NP-DS-25/26-DC	DP Mgr. prezen ní DS od 2025/26 611XNDD,612XNDD,..... (see the list of groups below)	Min. cours. 1 Max. cours. 1	Min/Max 18/18			Z
X2-NP-DS-24/25-DC	Projekty Mgr. prezen ní DS od 2024/25 622XN1,621XN1,..... (see the list of groups below)	Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
JZ-NP-DS-24/25-DC	Jazyky Mgr. prezen ní DS od 2024/25 615J2F1,615JBF2,..... (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-V1-24/25-DC		1. sem. Mgr. prezen ní DS výb r p edm tu od 2024/25		Min. cours. 1 Max. cours. 1	Min/Max 4/4			Z
617DOPD	Transportation Planning and Mode ...	617TZND	Technology of Railway Transport					
2S-NP-DS-V1-24/25-DC		2. sem. Mgr. prezen ní DS výb r p edm tu od 2024/25		Min. cours. 1 Max. cours. 1	Min/Max 4/4			Z
612BED	Road Safety Audit	618TEAM	Theoretical and Applied Mechanic ...					
3S-NP-DS-V1-25/26-DC		3. sem. Mgr. prezen ní DS výb r p edm tu od 2025/26		Min. cours. 1 Max. cours. 1	Min/Max 3/3			Z
612IDOS	Integrated Transport Systems	616STK	Simulation and Testing of Vehicl ...					
JZ-NP-DS-24/25-DC		Jazyky Mgr. prezen ní DS od 2024/25		Min. cours. 4 Max. cours. 4	Min/Max 8/8			J
615J2F1	Language - French 1	615JBF2	Language - French 2	615JBF3	Language - French 3			
615JBF4	Language - French 4	615J2I1	Language - Italian 1	615JBI2	Language - Italian 2			
615JBI3	Language - Italian 3	615JBI4	Language - Italian 4	615J2N1	Language - German 1			
615JBN2	Language - German 2	615JBN3	Language - German 3	615JBN4	Language - German 4			
615J2R1	Language - Russian 1	615JBR2	Language - Russian 2	615JBR3	Language - Russian 3			
615JBR4	Language - Russian 4	615J2S1	Language - Spanish 1	615JBS2	Language - Spanish 2			
615JBS3	Language - Spanish 3	615JBS4	Language - Spanish 4					
X2-NP-DS-24/25-DC		Projekty Mgr. prezen ní DS od 2024/25		Min. cours. 4 Max. cours. 4	Min/Max 13/13			ZP
622XN1	Master Project 1	621XN1	Master Project 1	614XN1	Master Project 1			
611XN1	Master Project 1	617XN1	Master Project 1	612XN1	Master Project 1			
620XN1	Master Project 1	618XN1	Master Project 1	616XN1	Master Project 1			
615XN1	Master Project 1	616XN2	Master Project 2	615XN2	Master Project 2			
622XN2	Master Project 2	614XN2	Master Project 2	612XN2	Master Project 2			
611XN2	Master Project 2	621XN2	Master Project 2	617XN2	Master Project 2			

620XN2	Master Project 2	618XN2	Master Project 2	618XN3	Master Project 3			
617XN3	Master Project 3	616XN3	Master Project 3	612XN3	Master Project 3			
611XN3	Master Project 3	614XN3	Master Project 3	622XN3	Master Project 3			
615XN3	Master Project 3	621XN3	Master Project 3	620XN3	Master Project 3			
616XN4	Master Project 4	614XN4	Master Project 4	621XN4	Master Project 4			
612XN4	Master Project 4	618XN4	Master Project 4	615XN4	Master Project 4			
620XN4	Master Project 4	611XN4	Master Project 4	617XN4	Master Project 4			
622XN4	Master Project 4							
XD-NP-DS-25/26-DC		DP Mgr. prezen ní DS od od 2025/26		Min. cours. 1	Min/Max 18/18			Z
				Max. cours. 1				
611XNDD	Master Thesis for study programm ...	612XNDD	Master Thesis for study programm ...	614XNDD	Master Thesis for study programm ...			
615XNDD	Master Thesis for study programm ...	616XNDD	Master Thesis for study programm ...	617XNDD	Master Thesis for study programm ...			
618XNDD	Master Thesis for study programm ...	620XNDD	Master Thesis for study programm ...	621XNDD	Master Thesis for study programm ...			
622XNDD	Master Thesis for study programm ...							
Y2-NP-DS-24/25-DC		PVP-B Mgr. prezen ní DS od 2024/25		Min. cours. 3	Min/Max 6/6			PV
				Max. cours. 3				
612Y2KS	Rail Transport in Settlements an ...	612Y2MD	Methods of Traffic Regulation an ...					

List of courses of this pass:

Code	Name of the course	Completion	Credits
611STS	Stochastic Systems 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.	Z,ZK	4
611XN1	Master Project 1	Z	2
611XN2	Master Project 2	Z	2
611XN3	Master Project 3	Z	1
611XN4	Master Project 4	Z	8
611XNDD	Master Thesis for study programme DS	Z	18
612BED	Road Safety Audit 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.	Z,ZK	4
612DAZP	Transport and Environment 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.	Z,ZK	4
612IDOS	Integrated Transport Systems Reasons for building of integrated transport systems, principle of integration, dividing of integration methods, traffic, infrastructure, technical, organizational methods, integration of tariff, sales systems, information systems, marketing of system, examples of non-integration.	ZK	3
612IKD	Rail Transport Infrastructure 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.	Z,ZK	5
612NAPI	Design and Maintenance of Transportation Structures 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.	Z,ZK	4
612TEAP	Theory of Road Traffic Operation 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.	Z,ZK	7
612TKVP	Highway Engineering Materials 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.	Z,ZK	4
612UMUP	Sustainable Mobility and Land - Use Planning 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.	Z,ZK	5

612VRZ	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 parameters.			
612XN1	Master Project 1	Z	2
612XN2	Master Project 2	Z	2
612XN3	Master Project 3	Z	1
612XN4	Master Project 4	Z	8
612XNDD	Master Thesis for study programme DS	Z	18
612Y2KS	Rail Transport in Settlements and Regions	KZ	2
Modernization and development of railway infrastructure in Czech Republic. Arrangement of railway networks and junctions. Suburban railway services. Network configuration and operation of metro systems. Network configuration and operation of tram systems. Special thematic lectures (rail transport in selected countries / regions).			
612Y2MD	Methods of Traffic Regulation and Prediction	KZ	2
Basic ways of traffic prognosis, traffic prognosis for large area (calculation of future traffic volumes, calculation of future traffic volumes between areas (analogical and synthetic methods, modal split, traffic distribution to road network). Shock wave in traffic flow. Service levels and their traffic volumes. Acceleration noise.			
612ZSUZ	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.			
614GISS	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			
614XN1	Master Project 1	Z	2
614XN2	Master Project 2	Z	2
614XN3	Master Project 3	Z	1
614XN4	Master Project 4	Z	8
614XNDD	Master Thesis for study programme DS	Z	18
615J2A1	Language - English 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 English and practical application, formal and technical registers and their use, language of management.			
615J2F1	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.			
615J2I1	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.			
615J2N1	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.			
615J2R1	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.			
615J2S1	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.			
615JBA2	Language - English 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 English and practical application, formal and technical registers and their use, language of management.			
615JBA3	Language - English 3	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 English and practical application, formal and technical registers and their use, language of management.			
615JBA4	Language - English 4	ZK	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 English and practical application, formal and technical registers and their use, language of management.			
615JBF2	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.			
615JBF3	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.			

615JBF4	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.			
615JBI2	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.			
615JBI3	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.			
615JBI4	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.			
615JBN2	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.			
615JBN3	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.			
615JBN4	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.			
615JBR2	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.			
615JBR3	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.			
615JBR4	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.			
615JBS2	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.			
615JBS3	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.			
615JBS4	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.			
615XN1	Master Project 1	Z	2
615XN2	Master Project 2	Z	2
615XN3	Master Project 3	Z	1
615XN4	Master Project 4	Z	8
615XNDD	Master Thesis for study programme DS	Z	18
616PDP	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. Reliability, technological aspects etc.			
616STK	Simulation and Testing of Vehicle Body and Systems	ZK	3
Simulation theory. Computing equipment for simulation. Modeling of mechanical and dynamic systems. Simulation and optimization methods. Hardware in the Loop (HIL). Simulation approaches for vehicle design. Simulation of propulsion and electric systems. Strength and material analyses of dynamical phenomena for vehicles of on-land carriage.			
616XN1	Master Project 1	Z	2
616XN2	Master Project 2	Z	2
616XN3	Master Project 3	Z	1
616XN4	Master Project 4	Z	8
616XNDD	Master Thesis for study programme DS	Z	18

617DOPD	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.			
617TZND	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.			
617XN1	Master Project 1	Z	2
617XN2	Master Project 2	Z	2
617XN3	Master Project 3	Z	1
617XN4	Master Project 4	Z	8
617XNDD	Master Thesis for study programme DS	Z	18
618GAZ	Geomechanics and Foundation Engineering	Z,ZK	3
Geology (basics of petrography and 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 of performing).			
618TEAM	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.			
618TIK	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.			
618XN1	Master Project 1	Z	2
618XN2	Master Project 2	Z	2
618XN3	Master Project 3	Z	1
618XN4	Master Project 4	Z	8
618XNDD	Master Thesis for study programme DS	Z	18
620XN1	Master Project 1	Z	2
620XN2	Master Project 2	Z	2
620XN3	Master Project 3	Z	1
620XN4	Master Project 4	Z	8
620XNDD	Master Thesis for study programme DS	Z	18
621XN1	Master Project 1	Z	2
621XN2	Master Project 2	Z	2
621XN3	Master Project 3	Z	1
621XN4	Master Project 4	Z	8
621XNDD	Master Thesis for study programme DS	Z	18
622AMMD	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.			
622MSV	Modelling and Vehicle Movement Simulation	KZ	2
Principles and possibilities 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.			
622XN1	Master Project 1	Z	2
622XN2	Master Project 2	Z	2
622XN3	Master Project 3	Z	1
622XN4	Master Project 4	Z	8
622XNDD	Master Thesis for study programme DS	Z	18

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

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