## Study plan

#### Name of study plan: 02 26 31 34 BSTR EPT 2012 P základ

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch: Program of study: Welcome page Type of study: unknown full-time

Required credits: 279

Elective courses credits: -36 Sum of credits in the plan: 243 Note on the plan: export 03

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 202

The role of the block: P

Code of the group: 12B\*P\*P-TV

Name of the group: 07 2012 bakalá ský t locvik

Requirement credits in the group: In this group you have to gain 3 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 3

Note on the group: Letní výcvikový kurz je předmět povinný. Student jej může vykonat kdykoliv v průběhu studia,

avšak v souladu s příslušnými ustanoveními Ústavu tělesné výchovy a sportu ČVUT

Code of the group: 12B\*P\*P-ZT21

Name of the group: 04 2012 prezen ní ZT v po adí 21

Requirement credits in the group: In this group you have to gain 6 credits

Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 6 Note on the group:

	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
2333038	Fundamentals of Technology I.	Z	3	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12B\*P\*P-ZT21 Name=04 2012 prezen ní ZT v po adí 21

	2333038	Fundamentals of Technology I.	Z	3	
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Production processes in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technical metals. Production of pig iron and steel. Casting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming technology. Hot and cold forging. Free and drop forging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of welding. Fusion welding: Flame welding and arc welding with coated electrodes. Thermal cutting.

Code of the group: 12B-KMENP TZI STR

Name of the group: 01 2012 souhrn skupin 12B\*PiP-KMEN pro i od 1 do 6 Requirement credits in the group: In this group you have to gain 156 credits

Requirement courses in the group: In this group you have to complete 37 courses

Credits in the group: 156

Note on the group: Společné povinné předměty bakalářských programů STR a TZSI

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
2371047	Automatic Control Milan Hofreiter, R žena Petrová, Tomáš Vyhlídal, Jaromír Fišer Tomáš Vyhlídal Tomáš Vyhlídal (Gar.)	Z,ZK	5	3P+15C+05L	*	Р
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna, Jan Sko ilas Radek Šulc Radek Šulc (Gar.)	KZ	3	2P+1C	1	Р
2131512	Machine Elements and Mechanisms I. František Lopot	Z,ZK	6	3P+2C	*	Р
2131026	Machine Elements and Mechanisms II Eliška Cézová, Zden k ešpíro, Martin Dub, Jan Flek, Ji í Houkal, Jan Kanaval, František Lopot, Karel Petr František Lopot František Lopot (Gar.)	ZK	3	3P+0C	*	Р
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák <b>Zuzana</b> Sedlecká Jan Chyský (Gar.)	Z,ZK	4	2P+06C+1.4L	*	Р
2141505	Electrical machines and drives Jan Chyský, Jaroslav Novák, Lukáš Novák <b>Jaroslav Novák</b> Jaroslav Novák (Gar.)	Z,ZK	4	2P+06C+1.4L	*	Р
2021041	Physics I.	Z,ZK	7	4P+1L	*	Р
2021025	Physics II.	Z,ZK	4	1P+2L	3	Р
2133025	Design František Lopot František Lopot (Gar.)	Z	4	0P+4C	*	Р
2011021	Constructive Geometry Ivana Linkeová	Z,ZK	6	3P+2C	*	Р
2381054	Management and Economics of the Enterprise Theodor Beran, Št pánka Uli ná, Vladimír Brdek, Ladislav Vaniš, Petr Žemli ka Theodor Beran Theodor Beran (Gar.)	Z,ZK	4	2P+2C	*	Р
2011056	Mathematics I Radka Keslerová, Marta Hlavová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Nikola Pajerová, Petr Louda, Lukáš Hájek, Radka Keslerová Gejza Dohnal (Gar.)	Z,ZK	8	4P+4C	*	Р
2011062	Matematika II. Radka Keslerová	Z,ZK	8	4P+4C	*	Р
2011009	Mathematics III Radka Keslerová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Tomáš Neustupa, Stanislav Kra mar Stanislav Kra mar (Gar.)	Z,ZK	5	2P+2C	*	Р
2311101	Mechanics I. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Zbyn k Šika Zbyn k Šika (Gar.)	Z,ZK	4	2P+2C	*	Р
2311102	Mechanics II. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Václav Bauma Václav Bauma (Gar.)	Z,ZK	4	2P+2C	*	Р
2322029	Materials Science I.  Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír  Mára, Lucie Pilsová, Ta ana Vacková <b>Jana Sobotová</b> Jana Sobotová (Gar.)	KZ	3	2P+1L	2	Р
2321039	Materials Science II. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková, Jan Walter, Jana Sobotová Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2011049	Numerical Mathematics Radka Keslerová, Ji í Holman, Marta ertíková, Vladimír Hric, Petr Louda, Lukáš Hájek, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Petr Svá ek Petr Svá ek (Gar.)	Z,ZK	4	2P+2C	4	Р
2012037	Computer Graphics Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka <b>Ivana Linkeová</b> Ivana Linkeová (Gar.)	KZ	3	1P+1C	*	Р
2372041	Computer Support for Study Vladimír Hlavá	KZ	3	1P+1C	*	Р
2181026	Momentum, Mass and Heat Transfer Martin Dostál, Vojt ch B Iohlav, Stanislav Solna, Jan Sko ilas, Tomáš Jirout, Adam Krupica, Ji í Moravec Tomáš Jirout Tomáš Jirout (Gar.)	Z,ZK	5	3P+1C	*	Р
2131002	Engineering Design II Eliška Cézová, Martin Dub, Jan Flek, Jan Kanaval, František Lopot, Karel Petr, Martin Havlí ek, Jan Hoidekr, Roman Uhlí Karel Petr Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Р
2133013	Engineering Design III.  Jan Kanaval, František Lopot, Jan Hoidekr, David Skalický, Roman Uhlí Jan  Kanaval Jan Kanaval (Gar.)	Z	2	0P+2C	Z	Р
2133014	Engineering Design IV. František Lopot František Lopot (Gar.)	Z	2	0P+2C	L	Р
2372083	Measurement in Engineering Martin Novák, Vladimír Hlavá Martin Novák Martin Novák (Gar.)	KZ	3	1P+0C+2L	*	Р
2331068	Technology I.	Z,ZK	5	2P+2C	*	Р

2341014	Technology II.	Z,ZK	5	2P+0C+2L	*	Р
2012035	Algorithmization and Programming Fundamentals Ji í Holman, Marta ertíková, Vladimír Hric, Lukáš Hájek, Jan Halama, Vladimír Prokop, Martin Hanek, Jan Karel, Josef Musil, Petr Svá ek Petr Svá ek (Gar.)	KZ	4	1P+2C	*	Р
2153005	Fundamentals of Energy Conversions	Z	1	1P+1C	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р
haracteristics of the	e courses of this group of Study Plan: Code=12B-KMENP TZI ST	R Name=01	2012 sc	ouhrn skup	oin 12B*i	PiP-KMEN
	utomatic Control				ZK	5
	nportant part of many industrial processes. The goal of this course is to introduce studer n versus closed loop control, design of controllers and frequency based analysis of control					
· -	ntrollers. Some seminaries are arranged in laboratories where practical skills and control	engineering me	thods are t	rained. Studen	ts begin to	work with
	nmon platform of control engineers. hemistry				(Z	3
ı	e point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the	ne course (struct	ure and pr	I	1	_
•	al reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hy	`		•	,	
riented upon the material	properties measurement.					
	achine Elements and Mechanisms I.				ZK	6
, ,	s (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with us					
	rives). Seminars are devoted to practical individual solution of simple design projects - ta ints between shafts and hubs and tasks with welded and riveted joints. Sketching of macl				•	
eminar work.	and between shares and hass and tasks with worded and fiveled joints. Okcioning of maci	inc cicinents an	ia tricii siiri	ipic assembly a	11110 10 0100	паврепваь
	achine Elements and Mechanisms II			Z	'K	3
	calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connecti	ions, elements of	crank med	ı	1	eir accessorie
nd fittings.						
141504 EI	lectric Circuits and Electronics			Ζ,	ZK	4
traduction into theory of e	electrical circuits, analysis special types of electrical circuits as DC and AC. Transient sta	taa in airawita wit				
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troduction into electronics	s. Principle and typical parameters of basic semiconductor components. Application in el	ectronic circuits	(rectifier, st	٠.		0,
ntroduction into electronics implifier). Analogue and dig	s. Principle and typical parameters of basic semiconductor components. Application in el gital circuits. Principle of analogue and digital signal processing. Logical circuits, convert	ectronic circuits	(rectifier, st	tabilizer, power	control, op	perational
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ntroduction into electronics implifier). Analogue and dig 2141505 EI C el. curcuits. Electrical por phase transformer, opera ontrol. Synchronous mach ow-voltage distribution system of the control of th	s. Principle and typical parameters of basic semiconductor components. Application in el gital circuits. Principle of analogue and digital signal processing. Logical circuits, convert lectrical machines and drives ower and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hy sting conditions, rated (scheduled) values. Induction machine, principle, construction, openines. DC-machines, principle, parameters, operating conditions, construction, starting, system.  hysics I.  of a particle motion. Principle of conservation of energy. System of particles, centre of magneture and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, cut Magnetic materials. Laboratories - accuracy of measurements, systematic and random et us experiments related to the lectures.  hysics II.  pretic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometric otoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of paid theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Latesign  s and their aplications in case of geared transmissions, axles and shafts, sliding and rolling onstructive Geometry geometric objects in the space - curves, surfaces and solids and their properties and mulanagement and Economics of the Enterprise  each the students of the Faculty of Mechanical Engineering the basic economic starting power economic quantities costs - revenues, expenses - incomes and other basic economations, every product or service is valued at a selling price and therefore it is necessary to expense and should understand the basic structure of financial statements. As a future mare aren basic managerial functions and their content. Furthermore, they will learn how to us a applications of multi-criteria decision-making. The basics of marketing and strategic materials as a limit function, integration of some special functions.  latematika II.  dary in E^k. Real function of k-variables. Partial derivatives and differe	ectronic circuits ers, microproces end control, special seed control, special seed control, special seed control, special seed control, special ers, conductivity errors, uncertainty errors, uncertainty errors, uncertainty errors, uncertainty errors, uncertainty errors,	ectromagnis. Starting, sed-torque ontinuum, or y, resistance of direct a dum propert dydrogen a surements of technica sal is for the esimple conpile and a sis in projecte introduce them thematis derivative. If the completion of the esimple conpile and a sis in projecte introduced the esimple completion of the esimple completion	tabilizer, power Z, et. Transformer speed-torque characteristic.  Z, et. Transformer speed-torque characteristic.  Z, et and indirect me characteristic and period of 6 experiment and period of 6 experiment and characteristic areasoning and et audience to be string of productions per ct management ed.  Z, onnections bettic areas: eigennum and Green's the of a vector field	ZK  c, principle, characteris Low-voltag  ZK es of bodie c, semicond asurements  ZK agnetic wav dic system of the related to the color and serverating budget. For decise  ZK ween concumbers an  ZK erators div ( ni theorem. Forem. A por	4 construction 4 construction tic, speed le instrument 7 s. Oscillation luctors, s, regressior 4 ves. Interactio of elements. to the lecture 4 6 4 em understar communicate vices. Every get. In the fie sion-making 8 lepts. Studen d eigenvecto 8 divergence) Transformatic otential vector

Mechanics I deals with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their systems with and without friction.

Z,ZK

2311101

Mechanics I.

There are introduced the methods of description of position and motion of particles and rigid bodies.

2311102	Mechanics II.	Z,ZK	4
Kinematics of point ar	d of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar moti	on, spherical motio	n, screw motior
	<ul> <li>Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and neory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms.</li> </ul>	vector method. Gra	aphical method
2322029	Materials Science I.	KZ	3
	tate of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, de	1	_
	structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, i		
2321039	Materials Science II.	Z.ZK	4
	Materials Science II. allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal a	-,	•
	alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.	na triorino mocriar	noar processing
2011049	Numerical Mathematics	Z.ZK	4
	systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Nume	1 , 1	•
	poundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.		
2012037	Computer Graphics	KZ	3
2372041	Computer Support for Study	KZ	3
	s students into creating technical and professional documents on computers or Web and into realizing technical computations v	1	
	creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical		
2181026	Momentum, Mass and Heat Transfer	Z.ZK	5
	sport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechan	1 ' 1	_
	ontinuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and		
	er by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2131002	Engineering Design II	Z.ZK	4
	Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surf	1 ' 1	etrical toleranc
•	erancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice th	. •	
2133013	Engineering Design III.	Z	2
	nit (draft drawing, detail drawing, assembly drawing, technical report)	_	_
2133014	Engineering Design IV.	Z	2
2372083	Measurement in Engineering	KZ	3
	inciples for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration an	1	-
nstruments.	(		
2331068	Technology I.	Z.ZK	5
	metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of	1 ' 1	
	old and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatments.	31	
2341014	Technology II.	Z,ZK	5
	nation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining ec	1 ' 1	-
•	facture. Engineering metrology. Assembly techniques. Introduction to process planing.		·
2012035	Algorithmization and Programming Fundamentals	KZ	4
	AB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma	1 1	d operations.
Writting M-script. Inpu	t and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S	ystems of linear ed	uations. Scrip
and functions. Structu	re of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers.	Structures. Algorith	mization of
simple programs: min	imum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution o	f systems of linear	equations.
2153005	Fundamentals of Energy Conversions	Z	1
2383001	Fundamentals of Law	Z	2
	gal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to pr	_	_
	ces of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It		
	hat will be regularly in touch with, especially during their professional career and to learn how to work with the collection of la	•	
	w some practical habits and processes while putting the law on, especially in domain of contracts and other important legal rela	ationships and to m	ake them rea
eads students to know	w some practical habits and processes write patting the law on, especially in domain of contracts and other important legal rea	anomompo ama to m	

Code of the group: 12BS\*7P-EPT

Name of the group: 12 2012 BSTR 7.sem povinné EPT

Requirement credits in the group: In this group you have to gain 20 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 20 Note on the group:

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
2151165	Hydraulic and Pneumatic Machines	Z,ZK	5	2P+2C	*	Р
2151090	Industry power and heating plant	Z,ZK	5	2P+2C	*	Р
2151554	Thermal Turbines	Z,ZK	5	2P+2C	*	Р
2151559	Heat Exchangers and Boilers	Z,ZK	5	2P+2C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BS\*7P-EPT Name=12 2012 BSTR 7.sem povinné EPT

2151165	Hydraulic and Pneumatic Machines	Z,ZK	5					
Classificiation and	Classificiation and principles of operation of hydraulic machines. Criterions of hydrodynamical similarity. Hydraulic systems. Differend types of pumps, construction, capacity contr							
and operation in va	and operation in various conditions. Theory of compression processes. Constructions, calculation, capacity control of compressors, operation with various gases. Refrigerating							
compressors. Acce	ssories of a compressor stations and plants. Economical and ecological problems of a compressed air production and distributio	n.						
2151090	Industry power and heating plant	Z,ZK	5					
2151554	Thermal Turbines	Z,ZK	5					
2151559	Heat Exchangers and Boilers	Z,ZK	5					

Code of the group: 12BS\*8P-EPT

Name of the group: 15 2012 BSTR 8.sem povinné EPT

Requirement credits in the group: In this group you have to gain 17 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 17 Note on the group:

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
2151118	Distributed Energy	Z,ZK	5	2P+2C	*	Р
2151117	Design of Power Facilities	Z,ZK	5	2P+2C	*	Р
2153006	Technology of Air Protection in Power Engineering	Z	2	0P+2C	*	Р
2151158	Principles of Refrigerating Technology and Heat Pumps	Z,ZK	5	2P+2C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BS\*8P-EPT Name=15 2012 BSTR 8.sem povinné EPT

2151118	Distributed Energy	Z,ZK	5
2151117	Design of Power Facilities	Z,ZK	5
2153006	Technology of Air Protection in Power Engineering	Z	2
2151158	Principles of Refrigerating Technology and Heat Pumps	Z,ZK	5

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 45

The role of the block: PV

Code of the group: 12B\*\*1Q-HUM

Name of the group: 03 2012 bakalá ské povinn volitelné humanitární

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 6)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 3)

Credits in the group: 2

Note on the group:

Ze skupiny humanitních předmětů nutno j e d e n absolvovat

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
2383009	Communication and Dealing with People Vladimír Brdek, Jan Horeic Jan Horeic Jan Horeic (Gar.)	Z	2	1P+1C	*	PV

### Characteristics of the courses of this group of Study Plan: Code=12B\*\*1Q-HUM Name=03 2012 bakalá ské povinn volitelné humanitární

2383009 Communication and Dealing with People Z 2
Human communication represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (with specific modifications) to the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.

Code of the group: 12B\*\*4Q-BZJ S+T

Name of the group: 08 2012 bakalá ské zkoušky z jazyk pro STR a TZIS

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 10)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 5)

Credits in the group: 2

Note on the group:

Součástí tohoto bakalářského studijního programu je povinnost vykonat zkoušku z jednoho cizího jazyka. Student ji může vykonat kdykoliv v průběhu studia. Administrativně je předmět přiřazen ke studijnímu plánu čtvrtého semestru druhého ročníku, neboť se předpokládá, že si student během předcházejících semestrů nejprve doplňuje v jazykových kurzech (volitelných předmětech) jazykové znalosti zejména v oblasti odborné terminologie

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
2041061	English-Bachelor Exam Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Ilona Šimice (Gar.)	Z,ZK	2	0P+2C	*	PV
2041063	French - Bachelor Exam /FME Michaela Schusová, Dušana Jirovská Eliška Vítková Dušana Jirovská (Gar.)	Z,ZK	2	0P+2C	*	PV
2041062	German - Bachelor Exam / FME Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z,ZK	2	0P+2C	*	PV
2041065	Russian - Bachelor Exam / FME Michaela Schusová, Hana Volejníková, Dušana Jirovská Eliška Vítková Dušana Jirovská (Gar.)	Z,ZK	2	0P+2C	*	PV
2041064	Spanish - Bachelor Exam / FME Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Jaime Andrés Villagómez (Gar.)	Z,ZK	2	0P+2C	*	PV

## Characteristics of the courses of this group of Study Plan: Code=12B\*\*4Q-BZJ S+T Name=08 2012 bakalá ské zkoušky z jazyk pro STR a TZIS

2041061	English-Bachelor Exam	Z,ZK	2				
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussion							
to write a summary, a	report and an essay, to read technical texts, to master grammar at advanced level.						
2041063	French - Bachelor Exam /FME	Z,ZK	2				
Mapped to the Commo	n European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	culties, to take pa	rt in discussions,				
to write a summary, a	report and an essay, to read technical texts, to master grammar at advanced level.						
2041062	German - Bachelor Exam / FME	Z,ZK	2				
Mapped to the Commo	n European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	culties, to take pa	rt in discussions,				
to write a summary, a	eport and an essay, to read technical texts, to master grammar at advanced level.						
2041065	Russian - Bachelor Exam / FME	Z,ZK	2				
Mapped to the Commo	n European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	culties, to take pa	rt in discussions,				
to write a summary, a	report and an essay, to read technical texts, to master grammar at advanced level.						
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2				
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions,							
to write a summary, a	write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.						

Code of the group: 12BS\*6Q-OP

Name of the group: 10 2012 BSTR 6. sem oborové projekty

Requirement credits in the group: In this group you have to gain 2 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 2

Note on the group:

Student si vybere předmět příslušný oboru, který studuje

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
2372091	Project	KZ	2	0P+2C	*	PV
2362091	Project	KZ	2	0P+2C	*	PV
2152091	Deparmental Project	KZ	2	0P+2C	*	PV
2182091	Project Tomáš Jirout	KZ	2	0P+2C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BS\*6Q-OP Name=10 2012 BSTR 6. sem oborové projekty

2372091	Project	KZ	2			
An individual project fro	An individual project from the branch of specialisation, which student will study on his/her magister level					
2362091	Project	KZ	2			
2152091	Deparmental Project	KZ	2			
2182091	Project	KZ	2			
Absolvent se seznámí s	Absolvent se seznámí se základy oboru Procesní technika.					

Code of the group: 12BS\*6Q-PP

Name of the group: 11 2012 BSTR 6. sem prezentace projekt

Requirement credits in the group: In this group you have to gain 4 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 4

Note on the group: 2363091 nesepsán Student si vybere předmět příslušný oboru, který studuje

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
2153091	Presentation of Project	Z	4	4B	*	PV
2363091	Project Presentation	Z	4	4B		PV
2373091	Project presentation	Z	4	4B	*	PV
2183091	Project Presentation Tomáš Jirout	Z	4	0P+4C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BS\*6Q-PP Name=11 2012 BSTR 6. sem prezentace projekt

2153091	Presentation of Project	Z	4					
2363091	Project Presentation	Z	4					
2373091	Project presentation	Z	4					
Diploma thesis or bache	Diploma thesis or bachelor work presentation. Student should study the presentation software possibilities and proposition of the department. Student should prepare the presentation							
of actual version of his	diploma or bachelor work and present it in the face of the other student. The presentation will continue with discussion. Consi	equently, the work	should be					
presented as a pdf file of	presented as a pdf file on a temporal web page.							
2183091	Project Presentation	Z	4					
Preparation and presentation of a given project theme.								

Code of the group: 12BS\*7Q-EPT-P1

Name of the group: 13 2012 BSTR 7.sem 1povvol EPT-P1

Requirement credits in the group: In this group you have to gain 5 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 5

Kód předmětu Projekt I. se zapisuje podle ústavu: 2153707 Ústav energetiky a 2183707 Note on the group:

Ústav procesní a zpracovatelské techniky

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
2183707	Project I. Radek Šulc, Lukáš Krátký Lukáš Krátký Lukáš Krátký (Gar.)	Z	5	0P+7C	*	PV
2153707	Project I.	Z	5	0P+7C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BS\*7Q-EPT-P1 Name=13 2012 BSTR 7.sem 1povvol EPT-P1

2183707	Project I.	Z	5
Project, dimensioning a	ind designing solution of basic elements for process technology.		' 
2153707	Project I.	Z	5

Code of the group: 12BS\*7Q-EPT-ZAM

Name of the group: 14 2012 BSTR 7.sem 1povvol EPT-zam

Requirement credits in the group: In this group you have to gain 5 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 5 Note on the group:

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	
2181502	Hydromechanical Equipment Tomáš Jirout Tomáš Jirout Tomáš Jirout (Gar.)	Z,ZK	5	2P+2C	*	PV	
2151002	Nuclear Power Principles	Z,ZK	5	2P+2C	*	PV	]

Characteristics of the courses of this group of Study Plan: Code=12BS\*7Q-EPT-ZAM Name=14 2012 BSTR 7.sem 1povvol EPT-zam

2181502 Hydromechanical Equipment Design, principles and basic calculations of following equipment: pipes and pipe networks, packed and bubble columns, filters, settlers, centrifuges and cyclones, fluidized beds, mixing equipment, silos and conveyors, crushers and mills, granulators, extruders, injection and blow moulding machines, rolls and calenders. 2151002 5

Z,ZK

Physical fundamentals of nuclear energy. Development and heat removal from core. Basic materials for nuclear reactors. Basic types of nuclear reactors. Review of advanced types of nuclear reactors. Fuel cycle. Reactor radiation, detection and quantification, determination of radiation doses. Problems of nuclear safety and technical provisions.

Code of the group: 12BS\*8Q-EPT-BP

Name of the group: 16 2012 BSTR 8.sem 1povvol EPT-BP

Nuclear Power Principles

Requirement credits in the group: In this group you have to gain 5 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 5

Note on the group: Kód předmětu Bakalářská práce se zapisuje podle ústavu: 2153985 Ústav energetiky

2183985 Ústav procesní a zpracovatelské techniky

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
2183985	Bachelor Thesis Tomáš Jirout	Z	5	0P+6C	*	PV
2153985	Bachelor Thesis	Z	5	0P+6C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BS\*8Q-EPT-BP Name=16 2012 BSTR 8.sem 1povvol EPT-BP

2183985 Bachelor Thesis			5				
Bachelor thesis is final	Bachelor thesis is final individual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is applied acquired knowledge						
from previous study pe	from previous study periods.						
2153985	Bachelor Thesis	Z	5				

Code of the group: 12BS\*8R-EPT-ZAM

Name of the group: 17 2012 BSTR 8.sem 2povvol EPT-zam

Requirement credits in the group: In this group you have to gain 20 credits

Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 20

Note on the group: Ze skupiny PV předmětů nutno d v a volit

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
2181507	Diffusion separation equipment Radek Šulc, Vojt ch B lohlav Radek Šulc Radek Šulc (Gar.)	Z,ZK	5	2P+2C	*	PV
2152028	Energy Audit and Legislation	KZ	5	2P+2C	*	PV
2151702	Renewable Energy Sources	Z,ZK	5	2P+2C	*	PV
2181508	Heat transfer equipments  Martin Dostál, Stanislav Solna Martin Dostál Martin Dostál (Gar.)	Z,ZK	5	2P+2C	*	PV

#### Characteristics of the courses of this group of Study Plan: Code=12BS\*8R-EPT-ZAM Name=17 2012 BSTR 8.sem 2povvol EPT-zam

2181507	Diffusion separation equipment	<sub> </sub> ∠,∠K	5				
Classis from Equipment	for diffusion separation processes are giving a basic knowledge of processes and equipments where gas or liquid mixture is	been separated	due to principals				
of physical-chemical equilibriums or on the basis of mass transfer mechanisms. They are used for concentrating of products from dilute solutions or in turn for purification of diluted							
gasses or liquid solution	S.						

2152028	Energy Audit and Legislation	KZ	5
2151702	Renewable Energy Sources	Z,ZK	5
2181508	Heat transfer equipments	Z,ZK	5

Fundamentals of thermodynamics and conductive and convective heat transfer. Enthalpy balancing. Technical thermodynamics and basic thermodynamic cycles. Functional description, mechanical design, thermal and hydraulic design of a heat exchangers, evaporators and dryers.

Name of the block: Elective courses

Minimal number of credits of the block: 32

The role of the block: V

Code of the group: 12BS\*\*V-ALFA

Name of the group: 02 2012 ALFA volitelné pro STR

Requirement credits in the group: In this group you have to gain 32 credits

Requirement courses in the group: In this group you have to complete 12 courses

Credits in the group: 32

Note on the group: Předměty typu Alfa (A) nejsou u studijního programu B2341 Strojírenství povinné, avšak jsou

povinné u studijního programu B2342 Teoretický základ strojního inženýrství.

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
202A041	Physics I.	ZK	3	0P+0L	*	V
202A025	Physics II.A	ZK	2	0P+0C	*	V

201A021	Constructive Geometry A  Ivana Linkeová	ZK	3	0P+0C	*	V
201A056	Mathematics I.A Radka Keslerová	ZK	4	0P+0C	*	V
201A062	Mathematics II.A Radka Keslerová	ZK	4	0P+0C	*	V
201A009	Mathematics III.A Stanislav Kra mar	ZK	2	0P+0C	*	V
201A049	Numerical Mathematics A	ZK	2	0P+0C	*	V

202A041	Physics I.	ZK	3
Kinematics and dy	amics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elasti	c properties of boo	dies. Oscillations
waves. Fluid mech	nics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	onductors, semico	nductors,
nsulators. Magneti	field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and in	direct measureme	nts, regression
measurements of	1 various experiments related to the lectures.		
202A025	Physics II.A	ZK	2
araday's law of ele	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic v	vaves. Interactio
of radiation with ma	tter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a	and periodic syste	m of elements.
Spectra, x-rays, ;la	er. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	experiments relate	d to the lecture:
201A021	Constructive Geometry A	ZK	3
The subject is focu	sed on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.		
201A056	Mathematics I.A	ZK	4
Introduction to line	r algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable	'	'
201A062	Mathematics II.A	ZK	4
Open and closed s	et, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differ	ential operators di	v (divergence)
and curl (rotation). I	unction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ	gral, Fubini theorer	n. Transformatio
of integrals to pola	cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and G	reen's theorem. A	potential vecto
	of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector function and a vector function of a vector function.	ector field through	a surface. The
ield, independenc			
•	ij theorem.		
field, independence Gauss-Ostrograds 201A009	ij theorem.  Mathematics III.A	ZK	2

Code of the group: 12B\*\*1V-DOP SEMI

Name of the group: 05 2012 doporu ené seminá e

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0

Note on the group:

Pokud si chce student své dosud získané znalosti (například z matematiky, fyziky, cizích jazyků atd.) doplnit, může si zapsat některý z volitelných předmětů, které příslušné ústavy pro 1. semestr

(zimní) vypisují. Doporučujeme zejména předměty uvedené v této skupině

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
2026016	Physics - Seminar	Z	2	0P+2C	1	V
2016007	Mathematics I Seminar Radka Keslerová, Hynek ezní ek, Olga Majlingová Radka Keslerová Gejza Dohnal (Gar.)	Z	2	0P+2C	1	V

Characteristics of the courses of this group of Study Plan: Code=12B\*\*1V-DOP SEMI Name=05 2012 doporu ené seminá e

2026016	Physics - Seminar	Z	2
The subject is mainly m	eant for high-school students for repetition of high-school physics.		
2016007	Mathematics I Seminar	Z	2

Code of the group: 12B\*\*1V-DOP ZJK

Name of the group: 06 2012 doporu ené základní jazykové kurzy a prezentace

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 Note on the group:

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
2046155	English Conversation	Z	2	0P+2C	*	V
2046156	Ilona Šimice, Michele Le Blanc Ilona Šimice Michele Le Blanc (Gar.)  English Conversation	Z	2	0P+2C	L	V
2046071	Ilona Šimice, Michele Le Blanc  English - Lower Intermediate	Z	2	0P+2C	_	
2046071	Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová			UP+2C	L	
2046070	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046074	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046072	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046073	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046068	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046069	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046126	Czech Lower Intermediate  Jaroslava Kommová	Z	2	0P+2C	L	V
2046125	Czech Lower Intermediate  Jaroslava Kommová	Z	2	0P+2C	Z	V
2046118	Czech -Advanced Jaroslava Kommová	Z	2	0P+2C	L	V
2046117	Czech -Advanced	Z	2	0P+2C	Z	V
2046127	Jaroslava Kommová  Czech - Upper Intermediate	Z	2	0P+2C	Z	V
2046128	Jaroslava Kommová  Czech - Upper Intermediate	Z	2	0P+2C	L	
	Jaroslava Kommová  Czech Language for Beginners I.					
2046119	Jaroslava Kommová	Z	2	0P+2C	Z	V
2046120	Czech Language for Beginners II.  Jaroslava Kommová	Z	2	0P+2C	L	V
2046086	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046087	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)  Gar.)	Z	2	0P+2C	L	V
2046091	French - Advanced Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046088	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046084	French - Beginners Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046085	French - Beginners' Course Michaela Schusová, Dušana Jirovská Michaela Schusová Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2146060	Indonesian Language Course for Exchange	Z	2	0P+2C	*	V
2146061	Technical Indonesian - Course I.	Z	2	0P+2C	Z	V
2144062	Technical Indonesian - Course II.	Z,ZK	3	1P+2C	L	V
2046078	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V

2046079	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046083	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046082	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046081	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046080	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046076	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich <b>Michaela</b> Schusová Petr Laurich (Gar.)	Z	2	0P+2C	Z	V
2046077	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046161	Presentations in English Michaela Schusová	Z	2	0P+2C	*	V
2046166	Presentations in Czech Jaroslava Kommová	Z	2	0P+2C	*	V
2046162	Presentations in German Jaroslava Kommová, Eliška Vítková, Petr Laurich <b>Jaroslava Kommová</b> Jaroslava Kommová (Gar.)	Z	2	0P+2C	*	V
2046164	Presentations in Russian Dušana Jirovská	Z	2	0P+2C	*	V
2046163	Presentations in French language Dušana Jirovská <b>Dušana Jirovská</b>	Z	2	0P+2C	*	V
2046165	Presentations in Spanish Eliška Vítková	Z	2	0P+2C	*	V
2046137	Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046138	Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046141	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046142	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046140	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046139	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046136	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046135	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046099	Spanish - Lower Intermediate Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V
2046098	Spanish - Lower Intermediate Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046096	Spanish - Beginners Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046097	Spanish - Beginners Michaela Schusová, Jaime Andrés Villagómez Jaime Andrés Villagómez Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V

# Characteristics of the courses of this group of Study Plan: Code=12B\*\*1V-DOP ZJK Name=06 2012 doporu ené základní jazykové kurzy a prezentace

, a p					
2046155	English Conversation	Z	2		
Improving communication	nproving communicative skills in speaking on general topics and general technical topics.				
2046156	English Conversation	Z	2		
Improving communication	ve skills in speaking on general topics and general technical topics.				
2046071	English - Lower Intermediate	Z	2		
Mapped to the Commor	European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which	a student meets	either at school		

Mapped to the Common European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or at his/her free time and speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improvement of professional language.

2046070	T=		
	English - Lower Intermediate	Z	2
ū	early what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	em. writing in a sir	npie way about
•	g and comprehension of simple texts. Improvement of professional language. A1 - A2.	7	
2046074	English - Advanced	Z	2
•	ion of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Wri		
	summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student´s fic n advanced level. B1 - B2.	eia oi studies witht	out difficulties.
		Z	2
2046075	English - Advanced on European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in	_	_
	n in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and compre		
	kts from student's field of studies without difficulties. Grammar structures on advanced level.	cherision of popula	i solontino ana
2046072	English - Upper Intermediate	Z	2
	nguage skills taking into consideration professional English and common professional terminology. Comprehension of standar	_	<del>-</del>
	ay life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1.	a Englion opocolii c	
2046073	English - Upper Intermediate	Z	2
	on European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Er	nglish and commo	n professional
	ension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on interr	•	•
knowledge.			
2046068	English - Beginners	Z	2
Aim: Basic vocabulary	of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p	professional langua	age). A1
2046069	English - Beginners	Z	2
Mapped to the Comm	on European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understar	nding and use of b	asic expressions
of general scientific te	rminology (professional language).		
2046126	Czech Lower Intermediate	Z	2
Aim: Understanding o	early what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	em. Writing in a sir	nple way about
familiar topics. Readir	g and comprehension of simple texts. Improvement of professional language.		
2046125	Czech Lower Intermediate	Z	2
Aim: Understanding o	early what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	em. Writing in a sir	nple way about
familiar topics. Readir	g and comprehension of simple texts. Improvement of professional language.		
2046118	Czech -Advanced	Z	2
Mapped to the level o	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in	Czech without grea	at difficulties and
active participation in	a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compreher	nsion of popular-so	cientific and
scientific articles or te	xts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046117	Czech -Advanced	Z	2
Comprehension of spe	ken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	n discussions. Expi	ressing opinions
Written skills. Ability to	write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical a		
2046127	Czech - Upper Intermediate	Z	2
<del>-</del>	rd speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abil	lity to describe exp	eriences and
	one's opinions and plans. Reading and understanding general and technical texts.	,	
2046128	Czech - Upper Intermediate	Z	2
	on European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional		
=-	ension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inte	rmediate level. Bro	adening the
knowledge technical I		_	
2046119	Czech Language for Beginners I.	Z	2
-	veryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes		
2046120	Czech Language for Beginners II.	Z	2
• •	on European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	nding and use of b	asic expressions
	rminology (professional language).		
2046086	French - Lower Intermediate Course	Z	2
Understanding clearly	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. W	riting in a simple w	ay about familia
		9	
	omprehension of simple texts. Improvement of professional language.		
2046087	French - Lower Intermediate Course	Z	2
2046087 Mapped to the level o	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which	Z h a student meets	at school or in
2046087 Mapped to the level on his/her free time and	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	Z h a student meets of professional lar	at school or in nguage.
2046087 Mapped to the level on his/her free time and a 2046091	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced	Z h a student meets of professional lar	at school or in nguage.
2046087 Mapped to the level o his/her free time and 2046091 Mapped to the level o	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	Z h a student meets of professional lar Z opics familiar to the	at school or in aguage.  2 e student.
2046087 Mapped to the level on his/her free time and 2046091 Mapped to the level on Communication with the second communicatio	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a	Z h a student meets of professional lar Z opics familiar to the	at school or in aguage.  2 e student.
2046087  Mapped to the level on his/her free time and 2046091  Mapped to the level of Communication with recurrant issues and po	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a coular scientific and technical articles.	Z h a student meets of professional lar Z opics familiar to the	at school or in nguage.  2 e student. texts concerning
2046087 Mapped to the level on his/her free time and second with the level of the l	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a coular scientific and technical articles.  French - Advanced	Z h a student meets of professional lar Z opics familiar to the and understanding	at school or in inguage.  2 2 student. texts concerning
2046087 Mapped to the level on his/her free time and second with the level of the l	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a coular scientific and technical articles.  French - Advanced Seen language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation	Z h a student meets of professional lar Z oppics familiar to the and understanding Z on in discussions.	at school or in inguage.  2 student. texts concerning
2046087 Mapped to the level o his/her free time and 2046091 Mapped to the level o Communication with recurrant issues and po 2046090 Comprehension of spopinions. Written skills	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a coular scientific and technical articles.  French - Advanced Sken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to	Z h a student meets of professional lar Z popics familiar to the and understanding Z on in discussions. I echnical articles.	at school or in inguage.  2 e student. texts concerning  2 Expressing
2046087 Mapped to the level of his/her free time and 2046091 Mapped to the level of Communication with recurrant issues and potential companions. Written skills 2046089	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a cular scientific and technical articles.  French - Advanced Sken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to French - Upper Intermediate	Z h a student meets of professional lar Z opics familiar to the and understanding  Z on in discussions. I echnical articles. Z	at school or in inguage.  2 2 student. texts concerning  2 Expressing
2046087 Mapped to the level of his/her free time and communication with recurrant issues and populations. Written skills 2046089 Mapped to the level of the level	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a cular scientific and technical articles.  French - Advanced Sken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to a French - Upper Intermediate Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students of	Z h a student meets of professional lar Z opics familiar to the and understanding  Z on in discussions. echnical articles. Z comes across at w	at school or in inguage.  2 2 student. texts concerning  2 Expressing  2 ork, at school,
2046087 Mapped to the level of his/her free time and second 2046091 Mapped to the level of Communication with recurrant issues and possible 2046090 Comprehension of spopinions. Written skills 2046089 Mapped to the level of during free time, and	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to attive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a cular scientific and technical articles.  French - Advanced Oken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to French - Upper Intermediate Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students calking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding alout these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding alout these topics.	Z h a student meets of professional lar Z opics familiar to the and understanding  Z on in discussions. echnical articles. Z comes across at w	at school or in inguage.  2 e student. texts concerning  2 Expressing  2 ork, at school, d technical texts
2046087 Mapped to the level of his/her free time and second 2046091 Mapped to the level of Communication with recurrant issues and possible 2046090 Comprehension of spopinions. Written skills 2046089 Mapped to the level of during free time, and 2046088	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement  French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a cular scientific and technical articles.  French - Advanced Oken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to alking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding ternance of the proper intermediate.  French - Upper Intermediate	Z h a student meets of professional lar Z opics familiar to the and understanding  Z on in discussions. I echnical articles.  Z comes across at w anding general and Z	at school or in inguage.  2 e student. texts concerning  2 Expressing  2 ork, at school, d technical texts
2046087 Mapped to the level of his/her free time and second of the level of the lev	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to active speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a collar scientific and technical articles.  French - Advanced Owen language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to report. Upper Intermediate Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students calking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding stendard speech about familiar topics, that a students of speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics.	Z h a student meets of professional lar Z opics familiar to the and understanding  Z on in discussions. I echnical articles.  Z comes across at w anding general and Z	at school or in inguage.  2 e student. texts concerning  2 Expressing  2 ork, at school, d technical texts  2
2046087 Mapped to the level of his/her free time and size 2046091 Mapped to the level of Communication with recurrant issues and post 2046090 Comprehension of spopinions. Written skills 2046089 Mapped to the level of during free time, and 2046088 Understanding standard events, briefly explain	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to attive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a coular scientific and technical articles.  French - Advanced Oken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to report in termediate  Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students calking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abilione's opinions and plans. Reading and understanding general and technical texts.	Z h a student meets of professional lar Z popics familiar to the and understanding  Z on in discussions. I echnical articles.  Z comes across at w anding general and Z lity to describe exp	at school or in inguage.  2 e student. texts concerning  2 Expressing  2 ork, at school, d technical texts  2 eriences and
2046087 Mapped to the level of his/her free time and size 2046091 Mapped to the level of Communication with recurrant issues and position of spopinions. Written skills 2046089 Mapped to the level of during free time, and 2046088 Understanding standard events, briefly explaint 2046084	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to active speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a collar scientific and technical articles.  French - Advanced Owen language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to report. Upper Intermediate Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students calking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding stendard speech about familiar topics, that a students of speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics.	Z h a student meets of professional lar Z popics familiar to the and understanding  Z on in discussions. I echnical articles.  Z comes across at w anding general and Z lity to describe exp	at school or in aguage.  2 e student. texts concerning  2 Expressing  2 ork, at school, d technical texts  2 eriences and

20.10005	TE	_	0
2046085	French - Beginners´ Course Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which	Z a student meets	2 at school or in
* *	peaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2146060	Indonesian Language Course for Exchange	Z	2
Basic of Indonesian La	nguage for Student Exchange Program to Indonesia		
2146061	Technical Indonesian - Course I.	Z	2
	sian Language for Student Exchange Program to Indonesia	7 71/	2
2144062	Technical Indonesian - Course II.  nguage for Student Exchange Program to Indonesia	Z,ZK	3
2046078	German - Lower Intermediate Course	7	2
	early what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	_	_
=	and comprehension of simple texts. Improvement of professional language.	· ·	
2046079	German - Lower Intermediate Course	Z	2
	Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which		
	and speaking about them. Writing in a simple way about familiar topics, reading and comprehesion of simple texts. Improvement	ent of professional	
2046083	German - Advanced Course  Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in	Cormon without	2 groot difficulties
* *	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compr		-
	ts from student's field of studies without difficulties. Grammar structures on advanced level.	onenden er popul	
2046082	German - Advanced Course	Z	2
Comprehension of spo	ken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participat	ion in discussions	Expressing
<u> </u>	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to		
2046081	German - Upper Intermediate Course	Z	2
• •	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students on alking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understand the state of the s		
2046080	German - Upper Intermediate Course	7	2
	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abil	_	
_	one's opinions and plans. Reading and understanding general and technical texts.	ity to accombe exp	ononece and
2046076	German - Beginners	Z	2
Basic vocabulary of ev	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	sional language)	
2046077	German - Beginners	Z	2
	ommon European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding	and use of basic	expressions of
-	nology (professional language).	_	•
2046161 Dranarina atudanta ta 1	Presentations in English	Z	2
2046166	present in English on technical topics, with a possible co-operation with specialized departments.	Z	2
	Presentations in Czech give presentations in English on technical topics, with a possible co-operation with specialized departments.		2
2046162	Presentations in German	Z	2
	ting technical topics in German, possibly in cooperation with specialized departments.	_	_
2046164	Presentations in Russian	Z	2
Preparation for present	ting technical topics in Russian, possibly in cooperation with specialized departments.		'
2046163	Presentations in French language	Z	2
<u> </u>	ting technical topics in French, possibly in cooperation with specialized departments.		_
2046165	Presentations in Spanish	Z	2
2046137	ing technical topics in Spanish, possibly in cooperation with specialized departments.  Russian - Lower Intermediate Course	Z	2
	Russian - Lower intermediate Course what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wi	_	
	mprehension of simple texts. Improvement of professional language.	interior in a completiv	ay about larriin
2046138	Russian - Lower Intermediate Course	Z	2
Mapped to the level of	Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a str	udent meets at scl	nool or in his/h
free time and speaking	about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of profe	ssional language.	
2046141	Russian - Advanced	Z	2
	ken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participat		Expressing
2046142	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to Russian - Advanced	7	2
	Russian - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on t	_	
	ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a	=	
	ular scientific and technical articles.	· ·	
2046140	Russian - Upper Intermediate	Z	2
* *	Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student		_
	bout these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understa	anding general and	
2046139	Russian - Upper Intermediate	Z	2
_	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abil one's opinions and plans. Reading and understanding general and technical texts.	ity to describe exp	eriences and
2046136	Russian - Beginners	Z	2
	Russian - Deginners Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understand	_	
			2
Mapped to the level of	minology (professional language)	3	
Mapped to the level of		Z	2

2046099	Spanish - Lower Intermediate	Z	2		
Mapped to the level of C	common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a stu	dent meets at sch	iool or in his/her		
free time and speaking	e time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.				
2046098	Spanish - Lower Intermediate	Z	2		
Understanding clearly w	that is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wr	iting in a simple w	ay about familiar		
topics. Reading and cor	nprehension of simple texts. Improvement of professional language.				
2046096	Spanish - Beginners	Z	2		
Aim:Understanding clea	rly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a sin	nple way about		
familiar topics. Reading	and comprehension of simple texts. Improvement of professional language.				
2046097	046097				
Mapped to the Commor	European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a	student meets at	school or in		
his/her free time and sp	eaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	of professional lar	nguage.		

## List of courses of this pass:

Code	Name of the course	Completion	Credits
2011009	Mathematics III	Z,ZK	5
	An introductory course in ordinary differential equation and infinite series.		
2011021	Constructive Geometry	Z,ZK	6
	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati		
2011049	Numerical Mathematics	Z,ZK	4
Numerical solution	of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Numerical equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference		y differentia
2011056	Mathematics I	Z,ZK	8
In the course, grea	the remphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connection the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.	ns between concep	ts. Students
2011062	Matematika II.	Z,ZK	8
	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen		livergence)
and curl (rotation). I	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,	Fubini theorem. Tra	nsformation
of integrals to pola	er, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree	n's theorem. A pote	ential vector
field, independen	ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vect Gauss-Ostrogradskij theorem.	or field through a su	urface. The
2012035	Algorithmization and Programming Fundamentals	KZ	4
	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat	1	I
	nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. System		-
	tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S	-	-
simple programs	s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of	systems of linear e	quations.
2012037	Computer Graphics	KZ	3
2016007	Mathematics I Seminar	Z	2
201A009	Mathematics III.A	ZK	2
201A021	Constructive Geometry A	ZK	3
	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati		
201A049	Numerical Mathematics A	ZK	2
201A056	Mathematics I.A	ZK	4
_0.7.000	Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable		
201A062	Mathematics II.A	ZK	4
	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen	1	
	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,		
of integrals to pola	ir, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree	n's theorem. A pote	ential vector
field, independen	ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vect	or field through a su	urface. The
	Gauss-Ostrogradskij theorem.		
2021025	Physics II.	Z,ZK	4
	ectromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of ele		ı
of radiation with n	natter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	periodic system of	f elements.
Spectra, x-rays, ;la	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe	riments related to t	the lectures
2021041	Physics I.	Z,ZK	7
Kinematics and dy	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pr		Oscillations
waves. Fluid m	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	onductors, semicon	ductors,
insulators. Magnet	tic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire	ect measurements,	regression,
	measurements of 11 various experiments related to the lectures.		
	·		
2026016	Physics - Seminar	Z	2

202A025 Physics II.A ZK Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves. Interaction of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements. Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures. 202A041 Physics I. 7K 3 Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic properties of bodies. Oscillations, waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors, insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression, measurements of 11 various experiments related to the lectures. 2041061 English-Bachelor Exam Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. 2041062 German - Bachelor Exam / FME Z,ZK 2 Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. 2041063 French - Bachelor Exam /FME 7.7K 2 Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. 2041064 Spanish - Bachelor Exam / FME Z,ZK 2 Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. 2041065 Russian - Bachelor Exam / FME Z,ZK 2 Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. 2046068 English - Beginners Ζ 2 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language). A1 2046069 English - Beginners 7 2 Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language). 2046070 English - Lower Intermediate Ζ 2 Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2. Ζ English - Lower Intermediate Mapped to the Common European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or at his/her free time and speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improvement of professional language. 2046072 English - Upper Intermediate 2 The aim is to extend language skills taking into consideration professional English and common professional terminology. Comprehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1. 2046073 English - Upper Intermediate 2 Mapped to the Common European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional English and common professional terminology. Comprehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. 2046074 English - Advanced 7 2 The aim: comprehension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay, reading and comprehension of popular-scientific and scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. B1 - B2. 2046075 English - Advanced 7 2 Mapped to the Common European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. 2046076 German - Beginners Ζ 2 Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional language) 2046077 German - Beginners 7 2 Mapped to the level Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language). 2046078 German - Lower Intermediate Course Ζ 2 Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language. German - Upper Intermediate Course 2046080 2 Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. German - Upper Intermediate Course Mapped to the level of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students comes across at work, at school, during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical texts. 2046082 German - Advanced Course Comprehension of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical articles.

2046083	German - Advanced Course	Z	2
		_	_
	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in G	•	
and active particip	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehe	nsion of popular-s	cientific and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046084	French - Beginners	Z	2
Understanding clea	orly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	in a simple way a	bout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046085	French - Beginners' Course	Z	2
	el of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which a	_	l
	te and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046086	French - Lower Intermediate Course	Z	2
Understanding clea	ırly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writinç	j in a simple way a	bout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046087	French - Lower Intermediate Course	Z	2
	el of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a	_	
1	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046088	French - Upper Intermediate	Z	2
Understanding st	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi	ences and
	events, briefly explain one s opinions and plans. Reading and understanding general and technical texts.		
2046089	French - Upper Intermediate	7	2
	el of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students con	_	
_	nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandi		
2046090	French - Advanced	Z	2
Comprehension	of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation	n in discussions. Ex	rpressing
opinions.	Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a	and technical articl	es.
2046091	French - Advanced	7	2
	evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	nice familiar to the	
Communication wil	h native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	nderstanding texts	concerning
	currant issues and popular scientific and technical articles.		
2046096	Spanish - Beginners	Z	2
Aim:Understandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046097		7	2
	Spanish - Beginners	_	!
	ommon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s		
his/her free tin	e and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lar	iguage.
2046098	Spanish - Lower Intermediate	Z	2
Understanding clea	rly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	in a simple way a	bout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046099		7	2
	Spanish - Lower Intermediate	_	
	el of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer		
free time a	or speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of providing the state of the state	professional langua	age.
2046117	Czech -Advanced	Z	2
Comprehension of	s spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	cussions. Expressi	ng opinions.
	en skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t	· · · · · · · · · · · · · · · · · · ·	٠.
	Czech -Advanced	Z	2
2046118			
	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec		
active participati	on in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	ion of popular-scie	entific and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046119	Czech Language for Beginners I.	Z	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	l	
2046120	Czech Language for Beginners II.	7	2
		_	
iviapped to the Con	nmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	y and use of basic	expressions
	of general scientific terminology (professional language).		
2046125			2
	Czech Lower Intermediate	Z	
	Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	way about
		_	way about
Aim: Understandir	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Writing in a simple	-
Aim: Understandir	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate	Writing in a simple	2
Aim: Understandir	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	2
Aim: Understandir 2046126 Aim: Understandir	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Writing in a simple  Z Writing in a simple	2 way about
Aim: Understandir	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	2
Aim: Understandir  2046126 Aim: Understandir  2046127	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Writing in a simple  Z Writing in a simple	2 way about
Aim: Understandir  2046126 Aim: Understandir  2046127	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate	Writing in a simple  Z Writing in a simple	2 way about
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one so pinions and plans. Reading and understanding general and technical texts.	Writing in a simple  Z Writing in a simple  Z to describe experi	2 e way about 2 ences and
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate	Writing in a simple  Z Writing in a simple  Z to describe experi	2 way about 2 ences and 2
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Cor	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one so opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	Writing in a simple  Z Writing in a simple  Z to describe experi	2 e way about 2 ences and 2 professional
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Cor	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Czaprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate	Writing in a simple  Z Writing in a simple  Z to describe experi	2 e way about 2 ences and 2 professional
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Cor	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one so opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	Writing in a simple  Z Writing in a simple  Z to describe experi	2 e way about 2 ences and 2 professional
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Cor	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one so opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz oprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate knowledge technical language.	Writing in a simple  Z Writing in a simple  Z to describe experi	2 e way about 2 ences and 2 professional
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Corterminology. Con  2046135	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz aprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm knowledge technical language.  Russian - Beginners	Writing in a simple  Z Writing in a simple  Z to describe experi  Z ech and common lediate level. Broad	2 e way about 2 ences and 2 crofessional dening the 2
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Corterminology. Conterminology.	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one so opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  Timon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz prehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm knowledge technical language.  Russian - Beginners abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	Writing in a simple  Z Writing in a simple  Z to describe experi  Z ech and common ediate level. Broad	2 e way about  2 ences and  2 professional dening the  2 ge)
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Corterminology. Con  2046135 Basic voca 2046136	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate  g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate  andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz aprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm knowledge technical language.  Russian - Beginners  abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	Writing in a simple  Z Writing in a simple  Z to describe experi  Z ech and common pediate level. Broad	2 e way about  2 ences and  2 professional dening the  2 ge)  2
Aim: Understandir  2046126 Aim: Understandir  2046127 Understanding st  2046128 Mapped to the Corterminology. Con  2046135 Basic voca 2046136	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.  Czech - Upper Intermediate andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one so opinions and plans. Reading and understanding general and technical texts.  Czech - Upper Intermediate  Timon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz prehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm knowledge technical language.  Russian - Beginners abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	Writing in a simple  Z Writing in a simple  Z to describe experi  Z ech and common pediate level. Broad	2 e way about  2 ences and  2 professional dening the  2 ge)  2

2046137	Russian - Lower Intermediate Course	Z	2
Understanding clea	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	g in a simple way al	oout familiar
0040400	topics. Reading and comprehension of simple texts. Improvement of professional language.	_	
2046138	Russian - Lower Intermediate Course	Z	2
	el of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stude and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of		
2046139	Russian - Upper Intermediate	7	2
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi	
_	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	•	
2046140	Russian - Upper Intermediate	Z	2
	vel of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me		- 1
	ing about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understandi	ng general and tec	
2046141	Russian - Advanced		2
	of spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participatic Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific		
2046142	Russian - Advanced	7	2
	evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to	ppics familiar to the	
1	th native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	-	
	currant issues and popular scientific and technical articles.		
2046155	English Conversation	Z	2
	Improving communicative skills in speaking on general topics and general technical topics.	_	
2046156	English Conversation	Z	2
0040404	Improving communicative skills in speaking on general topics and general technical topics.	_	_
2046161	Presentations in English	Z	2
2046162	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.  Presentations in German	Z	2
2040102	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.	2	2
2046163	Presentations in French language	Z	2
20.0.00	Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.	_	_
2046164	Presentations in Russian	Z	2
	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.	ı	
2046165	Presentations in Spanish	Z	2
	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.		
2046166	Presentations in Czech	Z	2
	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departm		
2131002	Engineering Design II	Z,ZK	4
· ·	SPS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface ops, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	_	
2131026	Machine Elements and Mechanisms II	ZK	3
	, design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism,		_
	and fittings.	•	
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
, ,	elements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, ki	• •	
1	ion, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloade nd key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple asser	_	
presseu, spiirieu a	nd key joints between sharts and hous and tasks with welded and riveled joints. Sketching of machine elements and their simple asser seminar work.	libly utilits is also iti	uisperisable
2133013	Engineering Design III.	Z	2
2100010	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)	_	_
2133014	Engineering Design IV.	Z	2
2133025	Design	Z	4
	n, design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coupling	ings and clutches.	
2141504	Electric Circuits and Electronics	Z,ZK	4
	heory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of	• •	٠.
Introduction into	electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro		perational
2141505	Electrical machines and drives	Z,ZK	4
	ectrical machines and drives  ectrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Trans	1	
	mer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed		
control. Synchrono	ous machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque characte	ristic. Low-voltage i	nstruments.
	Low-voltage distribution system.		
2144062	Technical Indonesian - Course II.	Z,ZK	3
24.40000	Basic of Indonesian Language for Student Exchange Program to Indonesia	7	0
2146060	Indonesian Language Course for Exchange  Basic of Indonesian Language for Student Exchange Program to Indonesia	Z	2
2146061	Technical Indonesian - Course I.	Z	2
Z 14000 I	Second part of Indonesian Language for Student Exchange Program to Indonesia	_	_
2151002	Nuclear Power Principles	Z,ZK	5
	entals of nuclear energy. Development and heat removal from core. Basic materials for nuclear reactors. Basic types of nuclear reactors.		
I -	reactors. Fuel cycle. Reactor radiation, detection and quantification, determination of radiation doses. Problems of nuclear safety and		
2151090	Industry power and heating plant	Z,ZK	5

2151117	Design of Power Facilities	Z,ZK	5
2151118	Distributed Energy	Z,ZK	5
2151118	Principles of Refrigerating Technology and Heat Pumps	Z,ZK	5
2151165	Hydraulic and Pneumatic Machines	Z,ZK	5
	principles of operation of hydraulic machines. Criterions of hydrodynamical similarity. Hydraulic systems. Differend types of pumps, or		-
	n various conditions. Theory of compression processes. Constructions, calculation, capacity control of compressors, operation with various conditions.		•
•	npressors. Accessories of a compressor stations and plants. Economical and ecological problems of a compressed air production are	•	J J
2151554	Thermal Turbines	Z,ZK	5
2151559	Heat Exchangers and Boilers	Z,ZK	5
2151702	Renewable Energy Sources	Z,ZK	5
2152028	Energy Audit and Legislation	KZ	5
2152091	Departmental Project	KZ	2
2153005	Fundamentals of Energy Conversions	Z	1
	<del>*</del>	Z	ļ
2153006	Technology of Air Protection in Power Engineering		2
2153091	Presentation of Project	Z	4
2153707	Project I.	Z	5
2153985	Bachelor Thesis	Z	5
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical		
time distributions in	continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and there systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.	mai radiation. Mul	ticomponent
2404502		7 71/	
2181502	Hydromechanical Equipment and basic calculations of following equipment: pipes and pipe networks, packed and bubble columns, filters, settlers, centrifuges and c	Z,ZK	5
Design, principles a	equipment, silos and conveyors, crushers and mills, granulators, extruders, injection and blow moulding machines, rolls and cale		beas, mixing
2181507	Diffusion separation equipment	Z,ZK	5
	ment for diffusion separation processes are giving a basic knowledge of processes and equipments where gas or liquid mixture is be	•	_
	cal equilibriums or on the basis of mass transfer mechanisms. They are used for concentrating of products from dilute solutions or in	•	
. , ,	gasses or liquid solutions.		
2181508	Heat transfer equipments	Z,ZK	5
Fundamentals of th	ermodynamics and conductive and convective heat transfer. Enthalpy balancing. Technical thermodynamics and basic thermodynamic	•	description,
	mechanical design, thermal and hydraulic design of a heat exchangers, evaporators and dryers.		
2182019	Chemistry	KZ	3
General chemistr	y from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties	of matter, thermo	dynamics,
phase equilibrium	n, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher	mistry. Laboratory	practice is
	oriented upon the material properties measurement.		
2182091	Project	KZ	2
0400004	Absolvent se seznámí se základy oboru Procesní technika.	7	1
2183091	Project Presentation  Preparation and presentation of a given project theme.	Z	4
2183707	Project I.	Z	5
2103707	Project, dimensioning and designing solution of basic elements for process technology.	۷	1 3
2183985	Bachelor Thesis	Z	5
	final individual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is	<del>-</del>	-
Bacilloloi allocio io	from previous study periods.	o applica acquirec	Miowioago
2311101	Mechanics I.	Z,ZK	4
	with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their sys		1
	There are introduced the methods of description of position and motion of particles and rigid bodies.		
2311102	Mechanics II.	Z,ZK	4
Kinematics of point	and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, s	pherical motion, s	crew motion,
general spatial moti	on. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vectors.	or method. Graph	cal methods
	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms		1
2321039	Materials Science II.	Z,ZK	4
Fundamentals of m	etallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the		processing,
	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materi		
2322029	Materials Science I.	KZ	3
	ent state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defor	=	
2331068	rials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in		
	Technology I. of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form	Z,ZK ing processes. Se	5 mi-products
. Juliary properties	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatment		products,
2333038	Fundamentals of Technology I.	Z	3
	ses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technology.		1
· ·	sting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tech		
	rging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of weld		
	welding and arc welding with coated electrodes. Thermal cutting.		
2341014	Technology II.	Z,ZK	5
mechanics of chip for	ormation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining econor	nics. Automation c	f processes,
	programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.		1
	Project	KZ	2
2362091	Floject	114	

2363091	Project Presentation	Z	4
2371047	Automatic Control	Z,ZK	5
Automatic control	lers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automat	ic control theory a	nd practice
ike transfer functio	ns, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentra	tes on logic contro	ol and contro
via programmab	le logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained.	Students begin to	work with
	MATLAB software as a common platform of control engineers.		
2372041	Computer Support for Study	KZ	3
he course introdu	ces students into creating technical and professional documents on computers or Web and into realizing technical computations with t	he use of compute	ers. Student
gain practic	al skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating techni	cal-based WWW	page.
2372083	Measurement in Engineering	KZ	3
Overview of sen	sor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	verification of mea	surement
	instruments.		
2372091	Project	KZ	2
	An individual project from the branch of specialisation, which student will study on his/her magister level		
2373091	Project presentation	Z	4
iploma thesis or b	achelor work presentation. Student should study the presentation software possibilities and proposition of the department. Student sh	nould prepare the	presentatio
of actual version	of his diploma or bachelor work and present it in the face of the other student. The presentation will continue with discussion. Conse	quently, the work	should be
	presented as a pdf file on a temporal web page.		
2381054	Management and Economics of the Enterprise	Z,ZK	4
he subject is inten	ded to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonin	g and to help then	n understan
he basic relations	ships between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audienc	ce to be able to co	ommunicate
with economists in	n organizations. every product or service is valued at a selling price and therefore it is necessary to understand the simple costing of	products and serv	ices. Every
	ounter reports and should understand the basic structure of financial statements. As a future manager, he will compile and approve th		
•	they will learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project mana	•	ion-making
J	purposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be	introduced.	
2383001	Fundamentals of Law	Z	2
Basic orientation in	n legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provid	e a view into the	Czech Lega
Order, particular s	ources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is n	ecessary for stude	ents to knov
•	ons, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.		
ads students to k	now some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relation	ships and to make	e them read
	to prepare professional presentations and to understand basic structures between law and engineering		T
2383009	Communication and Dealing with People	Z	2
Human communic	cation represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (	with specific modi	fications) to
	the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.		

For updated information see <a href="http://bilakniha.cvut.cz/en/FF.html">http://bilakniha.cvut.cz/en/FF.html</a> Generated: day 2025-07-03, time 22:45.