## Study plan

## Name of study plan: 04 26 31 38 BSTR KPP 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: 261	
Elective courses credits: -21	
Sum of credits in the plan: 240	
Note on the plan:	

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 214 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

2333038Fundamentals of Technology I.Z3Production processes in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technical metals. Production of pigiron 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: Flamewelding 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
2371047	Tutors, authors and guarantors (gar.) Automatic Control Milan Hofreiter, R žena Petrová, Tomáš Vyhlídal, Jaromír Fišer Tomáš Vyhlídal Tomáš Vyhlídal (Gar.)	Z,ZK	5	3P+15C+05L	*	Ρ
2182019	<b>Chemistry</b> Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna , Jan Sko ilas <b>Radek Šulc</b> Radek Šulc (Gar.)	KZ	3	2P+1C	1	Ρ
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 <b>František Lopot</b> František Lopot (Gar.)	ZK	3	3P+0C	*	Ρ
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák <b>Zuzana</b> Sedlecká Jan Chyský (Gar.)	Z,ZK	4	2P+08C+14L	*	Р
2141505	Electrical machines and drives Jan Chyský, Jaroslav Novák, Lukáš Novák Jaroslav Novák Jaroslav Novák (Gar.)	Z,ZK	4	2P+06C+14L	*	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 František Lopot (Gar.)	z	4	0P+4C	*	Ρ
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	*	Ρ
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	*	Ρ
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	*	Ρ
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	*	Ρ
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	*	Ρ
2322029	Materials Science I. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková Jana Sobotová Jana Sobotová (Gar.)	КZ	3	2P+1L	2	Ρ
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	*	Ρ
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	Ρ
2012037	<b>Computer Graphics</b> Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka <b>Ivana Linkeová</b> Ivana Linkeová (Gar.)	КZ	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	*	Ρ
2131002	Engineering Design II Eliška Cézová, Martin Dub, Jan Flek, Jan Kanaval, František Lopot, Karel Petr, Martin Havlí ek, Jan Hoidekr, Roman Uhlí <b>Karel Petr</b> Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Ρ
2133013	Engineering Design III. Jan Kanaval, František Lopot, Jan Hoidekr, David Skalický, Roman Uhlí Jan Kanaval Jan Kanaval (Gar.)	Z	2	0P+2C	Z	Ρ
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.)	КZ	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.)	ΚZ	4	1P+2C	*	Ρ
2153005	Fundamentals of Energy Conversions	Z	1	1P+1C	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р
Characteristics of the pro i od 1 do 6	e courses of this group of Study Plan: Code=12B-KMENP TZI ST	FR Name=01	2012 so	ouhrn sku	pin 12B*P	iP-KMEN
	Itomatic Control				"ZK	5
like transfer functions, open via programmable logic cont	portant part of many industrial processes. The goal of this course is to introduce studer versus closed loop control, design of controllers and frequency based analysis of control trollers. Some seminaries are arranged in laboratories where practical skills and control mon platform of control engineers.	l systems. The co	urse also o	concentrates	on logic contro	ol and control
2182019 Ch	nemistry point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the	he course (struct	ure and pr	1	KZ	3 Ivnamics.
phase equilibrium, chemical	reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hy		-	-		-
oriented upon the material p 2131512 Ma	oroperties measurement. achine Elements and Mechanisms I.			7	.ZK	6
	(screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with us	e of feathers, pins	s, tenons, o		,	-
	ives). Seminars are devoted to practical individual solution of simple design projects - ta	-				
	nts between shafts and hubs and tasks with welded and riveted joints. Sketching of mach	hine elements an	d their sim	ple assembly	units is also i	ndispensable
seminar work.	achina Elementa and Machaniana II				71/	
	achine Elements and Mechanisms II calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connecti	ions elements of	crank med	1	ZK	3 r accessories
and fittings.			oranicinot	, pipo		
2141504 Ele	ectric Circuits and Electronics			Z	,ZK	4
	lectrical circuits, analysis special types of electrical circuits as DC and AC. Transient sta			-	-	
	. Principle and typical parameters of basic semiconductor components. Application in el			abilizer, powe	er control, ope	erational
	ital circuits. Principle of analogue and digital signal processing. Logical circuits, convert ectrical machines and drives	ers, microproces	501.	7	ZK	4
	wer and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hy	steresis loop. Ele	ectromagne	1	· I	•
3-phase transformer, operat	ing conditions, rated (scheduled) values. Induction machine, principle, construction, ope	erating conditions	. Starting,	speed-torque	characteristi	c, speed
-	nes. DC-machines, principle, parameters, operating conditions, construction, starting, sp.	peed control, spe	ed-torque	characteristic	. Low-voltage	instruments.
Low-voltage distribution syst						7
	nysics I. f a particle motion. Principle of conservation of energy. System of particles, centre of ma	ss Rigid body Co	ontinuum e	1	,ZK	•
	nperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, cu	• •				
insulators. Magnetic field. Magnetic field.	agnetic materials. Laboratories - accuracy of measurements, systematic and random er	rrors, uncertainty	of direct a	nd indirect m	easurements	regression,
	s experiments related to the lectures.					
	nysics II. Anticiduction Maxwell's equations, electromognatio waves, Light wave entire, geometric	aal antiaa Quantu	im proport		.,ZK	4
-	netic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometri toelectric effect. Wave-particle mature of matter. Quantum-mechanical description of pa	-			-	
	I theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Lab			•		
2133025 De	esign				Z	4
Design, design calculations	and their aplications in case of geared transmissions, axles and shafts, sliding and rolling	ng bearings, shat	ft coupling	s and clutche	s	
	onstructive Geometry			Z	,ZK	6
	eometric objects in the space - curves, surfaces and solids and their properties and mu	tual relations.			71/	
1	anagement and Economics of the Enterprise ach the students of the Faculty of Mechanical Engineering the basic economic starting po	oints necessary fo	or technica		,ZK	4 n understand
	een economic quantities costs - revenues, expenses - incomes and other basic econom			•		
with economists in organization	tions. every product or service is valued at a selling price and therefore it is necessary t	to understand the	simple co	sting of produ	ucts and servi	ces. Every
	ports and should understand the basic structure of financial statements. As a future mar	-	-			
	arn 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 materiate and strategic			-	nt. For decision	on-making
· · ·	athematics I		o introduct	1	ZK	8
	asis is placed on the theoretical basis of the concepts discussed and on the derivation of	of basic relations	hips and c	1	· I	-
will also get to know the proc	edures for solving problems with parametric input. In addition, students will gain extended	knowledge in sor	ne themati	c areas: eiger	numbers and	eigenvectors
	al, integral as a limit function, integration of some special functions.					
	atematika II. dary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient	and directional d	lorivativo (		,ZK	8
	given implicitly. Local and global (= absolute) extremes of a function of more variables. Dou			-		
	cal and spherical coordinates. A simple smooth curve and line integral of a scalar and v	-		-		
	integral on the path. Simple smooth surface and surface integral of a scalar function ar	nd a vector functi	on. Flow o	f a vector field	d through a su	urface. The
Gauss-Ostrogradskij theore						_
	athematics III dinary differential equation and infinite series.			Z	"ZK	5
· · · · · · · · · · · · · · · · · · ·	echanics I.			Z	,ZK	4
	basic concepts of statics. There are described the methods of solution of equilibrium of p	articles and rigid	bodies an			thout friction.
There are introduced the me	ethods of description of position and motion of particles and rigid bodies.					

2311102	Machanica II	7 71/	4
	Mechanics II. of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motio	Z,ZK	•
	Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and	<i>,</i> 1	, ,
• ·	ory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms.	Vector method. Gr	aphical methods
2322029	Materials Science I.	KZ	3
	te of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, def		÷
	ructure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in		
2321039	Materials Science II.	Z.ZK	4
	lurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal ar	,	-
	loys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.		lical processing,
2011049		Z.ZK	4
	Numerical Mathematics	,	•
	stems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Nume bundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.		anary unerentiar
		1/7	2
2012037	Computer Graphics	KZ	3
2372041	Computer Support for Study	KZ	3
	students into creating technical and professional documents on computers or Web and into realizing technical computations w		•
· · ·	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
	port phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanic		
	tinuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and	thermal radiation.	Multicomponent
systems. Mass transfer	by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2131002	Engineering Design II	Z,ZK	4
Principles of ISO GPS	(Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surfa	ace texture, geom	etrical tolerance,
dimensional loops, tole	rancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	ir knowledge from	n lectures.
2133013	Engineering Design III.	Z	2
Design of assembly uni	t (draft drawing, detail drawing, assembly drawing, technical report)		
2133014	Engineering Design IV.	Z	2
2372083	Measurement in Engineering	KZ	3
Overview of sensor prin	ciples for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	l verification of me	easurement
instruments.			
2331068	Technology I.	Z,ZK	5
Foundry properties of m	etals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of I	orming processes	. Semi-products,
heating-up. Cutting. Col	ld and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatments.		
2341014	Technology II.	Z,ZK	5
mechanics of chip form	ation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining ecc		on of processes,
	acture. 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		d operations.
° °	and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Sy		•
	of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers.		
simple programs: minin	num, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of	systems of linear	equations.
2153005	Fundamentals of Energy Conversions	Z	1
2383001	Fundamentals of Law	Z	2
	al system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to pro	_	_
°	es of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is		•
	at will be regularly in touch with, especially during their professional career and to learn how to work with the collection of law		
	some practical habits and processes while putting the law on, especially in domain of contracts and other important legal rela		
	presentations and to understand basic structures between law and engineering	•	
i lo prepare professional			

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

Name of the group: 12 2012 BSTR 7.sem povinné KPP Requirement credits in the group: In this group you have to gain 22 credits Requirement courses in the group: In this group you have to complete 4 courses Credits in the group: 22 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
2351110	Modeling and simulation I. Petr Mašek, Miroslav Ondrá ek, Tomáš Lazák, Jan Smolík, Tomáš Krannich, Josef Kekula, Petr Kolá, Vojt ch Matyska Jan Smolík Jan Smolík (Gar.)	Z,ZK	5	2P+2C+0L	*	Р
2211581	Transmissions Ji í Pakosta Ji í Pakosta Ji í Pakosta (Gar.)	Z,ZK	5	2P+2C	*	Р
2311073	Simulation of Mechanical Systems Zbyn k Šika	Z,ZK	6	2P+3C	*	Р

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

2351110	Modeling and simulation I.	Z,ZK	5
The subject is focused	n explanation of the design of machine tool axis by individual parts and components.		

2211581	Transmissions	Z,ZK	5					
The course provides a	The course provides a general summary of transmissions for various applications which the student in the specialization designer-calculator meets. The gearing basics of production							
and transport machines	and transport machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission devices of motor vehicles.							
2311073	Simulation of Mechanical Systems	Z,ZK	6					

### Code of the group: 12BS\*7Q-KPP-OP

Name of the group: 13 2012 BSTR 7.sem 1povvol KPP-OP 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:

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
2112092	Department Project	KZ	4	0P+6C	*	Р
2122092	Department Project	KZ	4	0P+6C	*	Р
2352092	Specialization Project Vladimír Andrlík Vladimír Andrlík Vladimír Andrlík (Gar.)	KZ	4	0P+6C+0L	*	Ρ
2212092	Project Ji í Pakosta, Michal Jasný, Jakub Seidl, Jaroslav Kan ra, Rastislav Toman, Petr Hatschbach, Antonín Mikulec, Old ich Vítek, Ji í Vávra, Petr Hatschbach Old ich Vítek (Gar.)	кz	4	0P+4C	Z	Ρ
2312092	Department project Michael Valášek	KZ	4	0P+6C	*	Ρ
2132092	Project František Lopot	KZ	4	0P+6C	*	Ρ

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

2112092	Department Project	KZ	4
2122092	Department Project	KZ	4
The content of the s	ubject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the department.	•	
2352092	Specialization Project	KZ	4
The course is focus	ed on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student wi	I get acquainted v	vith the problems
of manufacturing m	achines and the equipment, respectively its parts according to the orientation of their work, and during regular weekly consultati	ons with the supe	visor proceed in
professional solutio	n of the problem. At the end of the semester students present their work on small oral examination in which they present the work	rk performed, the	coherence and
meaning.			
2212092	Project	KZ	4
Basic practical skills	of work with advanced CAD/CAE/CAM systems. Project training in solution of design task based on industry requirements.		
2312092	Department project	KZ	4
Individual asignmer	t ' · · · · · · · · · · · · · · · · · ·	1	•
2132092	Project	KZ	4
Elaboration of seme	ster global project of mechanical drive of conveyor composed of electric motor, elastic shaft coupling (respectively V-belt drive),	gearbox provided	with two pairs
of mating gears and	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected m	echanical drive is	provided instead
of previous gearbox	and additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing	production and ec	onomic problems

of mating gears and compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechanical drive is provided instead of previous gearbox and additional mechanical drives by means of only one single-stage warm gearbox. Elaboration of 4 additional reports analysing production and economic problems of assigned machine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism and its flywheel for assigned single-cylinder piston engine.

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

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

Requirement credits in the group: In this group you have to gain 23 credits

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

Credits in the group: 23

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
2131120	Design of Steel Structures Zden k ešpíro	Z,ZK	6	2P+2C	*	Р
2351117	Vladimír Andrlík Vladimír Andrlík Vladimír Andrlík (Gar.)	Z,ZK	5	2P+0C+2L	*	Р

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

2131120	Design of Steel Structures	Z,ZK	6	
2351117		Z,ZK	5	
mportance of fluid mechanisms and drives, principle, design and use. Divided on two parts - Hydraulics and Pneumatics.				

#### 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 Horejc Jan Horejc Jan Horejc (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.
 Z
 2

#### 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 Co	ommon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater dil	fficulties, to take par	t in discussions
to write a summa	ary, 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 Co	ommon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater dii	fficulties, to take par	t in discussions
to write a summa	ary, 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 Co	ommon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater dil	fficulties, to take par	t in discussions
	ommon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater di rry, a report and an essay, to read technical texts, to master grammar at advanced level.	fficulties, to take par	t in discussions
to write a summa		fficulties, to take par	t in discussions
to write a summa 2041065	ary, a report and an essay, to read technical texts, to master grammar at advanced level.	Z,ZK	2
to write a summa 2041065 Mapped to the Co	ary, a report and an essay, to read technical texts, to master grammar at advanced level.           Russian - Bachelor Exam / FME	Z,ZK	2
to write a summa 2041065 Mapped to the Co	ary, a report and an essay, to read technical texts, to master grammar at advanced level. Russian - Bachelor Exam / FME mmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater dit	Z,ZK	2
to write a summa 2041065 Mapped to the Co to write a summa 2041064	ary, a report and an essay, to read technical texts, to master grammar at advanced level. Russian - Bachelor Exam / FME promon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater did ary, a report and an essay, to read technical texts, to master grammar at advanced level.	Z,ZK	2 t in discussions 2

#### 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: 2

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
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 proje	n 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 sezr	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 vy	vbere předmě	ět přísluš	śný obor	u, který st	uduje
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	2363091 Project Presentation					
2373091	Z	4				
Diploma thesis or bach	elor work presentation. Student should study the presentation software possibilities and proposition of the department. Stude	nt 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. Cons	equently, the worl	should be			
presented as a pdf file	on a temporal web page.					
2183091	Project Presentation	Z	4			
Preparation and preser	Preparation and presentation of a given project theme.					

Code of the group: 12BS\*8Q-KPP-BP Name of the group: 16 2012 BSTR 8.sem 1povvol KPP-BP 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:

Name of the block: Elective courses Minimal number of credits of the block: 32 The role of the block: V

Code of the group	p: 12BS**V-ALFA					
Name of the grou	p: 02 2012 ALFA volitelné pro STR					
-	dits in the group: In this group you have to gain 32	credits				
•	rses in the group: In this group you have to compl		reoe			
•			1262			
Credits in the gro	•					
Note on the group	p: Předměty typu Alfa (A) nejsou u studijního p povinné u studijního programu B2342 Teore					však jsou
	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
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 Lud k Beneš	ZK	2	0P+0C	*	V
Characteristics of the	courses of this group of Study Plan: Code=12BS**V-ALFA Na	me-02 2012		itelné nr	o STR	
	vsics I.				ZK	3
	a particle motion. Principle of conservation of energy. System of particles, centre of m	ass. Rigid body. C	ontinuum. el	astic prope		
waves. Fluid mechanics. Tem	perature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, c	urrent, conductivit	y, resistance	. Conducto	rs, semiconduc	ctors,
insulators. Magnetic field. Ma	agnetic materials. Laboratories - accuracy of measurements, systematic and random	errors, uncertainty	of direct an	d indirect m	neasurements,	regression,
measurements of 11 various	experiments related to the lectures.				<u> </u>	
	ysics II.A				ZK	2
	etic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geomet	-			-	
	oelectric effect. Wave-particle mature of matter. Quantum-mechanical description of p					
	theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. La	aboratories - meas	surements of	r 6 experim		
	nstructive Geometry A	utual relations			ZK	3
	cometric objects in the space - curves, surfaces and solids and their properties and m				ZK	4
	thematics I.A , analytic geometry of straight lines and planes in E3, calculus of functions of one var	iable		I	2n	4
1	thematics II.A				ZK	4
	ary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradier	nt and directional of	derivative. Di	ifferential or		vergence)
	iven implicitly. Local and global (= absolute) extremes of a function of more variables. Do					<b>o</b> ,
of integrals to polar, cylindric	al and spherical coordinates. A simple smooth curve and line integral of a scalar and	vector function. C	rculation an	d Green's t	heorem. A pote	ntial vector
field, independence of a line	integral on the path. Simple smooth surface and surface integral of a scalar function	and a vector funct	on. Flow of	a vector fiel	d through a su	rface. The
Gauss-Ostrogradskii theoren	n.					

201A009	Mathematics III.A	ZK	2
201A049	Numerical Mathematics 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	neant 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 Ilona Šimice, Michele Le Blanc Ilona Šimice Michele Le Blanc (Gar.)	Z	2	0P+2C	*	V
2046156	English Conversation Ilona Šimice, Michele Le Blanc	Z	2	0P+2C	L	V
2046071	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	L	V
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 Jaroslava Kommová	Z	2	0P+2C	Z	V
2046127	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046128	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046119	Czech Language for Beginners I. 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 Dušana Jirovská (Gar.)	z	2	0P+2C	L	V
2046091	French - Advanced Michaela Schusová, Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.)	z	2	0P+2C	L	V
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate Michaela Schusová, Dušana Jirovská 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

	1		1	1		1
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 <b>Eliška</b> 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 Michaela 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 Jaroslava Kommová 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 Dušana Jirovská	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 <b>Dušana Jirovská</b>	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	<b>Spanish - Lower Intermediate</b> Michaela Schusová, Jaime Andrés Villagómez <b>Eliška Vítková</b> Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V
2046098	<b>Spanish - Lower Intermediate</b> Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez <b>Eliška Vítková</b> 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

kurzy a prezentace		
2046155 English Conversation	Z	2
Improving communicative skills in speaking on general topics and general technical topics.	1	
2046156 English Conversation Improving communicative skills in speaking on general topics and general technical topics.	Z	2
	Z	2
2046071 English - Lower Intermediate Mapped to the Common European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which	1 1	
or at his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvem		
2046070   English - Lower Intermediate	Z	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 the	m. writing in a sin	npie way about
familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	· · ·	
2046074 English - Advanced	Z	2
The aim: comprehension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writ		
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	Id of studies witho	out difficulties.
Grammar structures on advanced level. B1 - B2.	· · · · · ·	
2046075 English - Advanced	Z	2
Mapped to the Common European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in B		
and active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and compre	hension of popula	r-scientific and
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	· · · · ·	
2046072 English - Upper Intermediate	Z	2
The aim is to extend language skills taking into consideration professional English and common professional terminology. Comprehension of standard	I English speech a	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	Z	2
Mapped to the Common European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional En	-	
terminology. Comprehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intern	nediate level. Broa	dening grammar
knowledge.	1	
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	rofessional langua	age). A1
2046069 English - Beginners	Z	2
Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	iding and use of ba	asic expressions
of general scientific terminology (professional language).		
2046126 Czech Lower Intermediate	Z	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 the	m. Writing in a sir	nple way about
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046125 Czech Lower Intermediate	Z	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 the	m. Writing in a sir	nple way about
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046118 Czech -Advanced	Z	2
Mapped to the level of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in C	zech 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 comprehen	sion of popular-sc	cientific and
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046117 Czech - Advanced	Z	2
Comprehension of spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	discussions. Expr	essing opinions.
Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical a	rticles.	
2046127 Czech - Upper Intermediate	Z	2
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ity to describe exp	eriences and
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046128 Czech - Upper Intermediate	Z	2
Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional	1 1	
terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter		
knowledge technical language.		-
2046119 Czech Language for Beginners I.	Z	2
Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	1 1	_
2046120 Czech Language for Beginners II.	7	2
Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	· - ·	_
of general scientific terminology (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. Wr	1 1	
topics. Reading and comprehension of simple texts. Improvement of professional language.		ay about laminar
2046087 French - Lower Intermediate Course	7	2
Apped to the level of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which	, <u> </u>	_
his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046091 French - Advanced	Z	2
Advanced French - Advanced A	I – I	
Communication with native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a	-	
currant issues and popular scientific and technical articles.	ia unuersidiiuiiig i	
	7	
2046090   French - Advanced	Z	2 Expressing
Comprehension of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation of the student of the student. Communication with native speakers, participation of the student scientific and the scientific and the student scientific and the student scientific and the sci		Lynessing
opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te		

2046089	French - Upper Intermediate	Z	2
	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students o Iking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa		
2046088	French - Upper Intermediate	Z	2
Understanding standard	speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ty to describe exp	eriences and
2046084	ne's opinions and plans. Reading and understanding general and technical texts. French - Beginners	Z	2
	that is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wr		
topics. Reading and cor	nprehension of simple texts. Improvement of professional language.		
2046085	French - Beginners' Course	Z	2
	Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which eaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of		
2146060	Indonesian Language Course for Exchange	Z	2
	nguage for Student Exchange Program to Indonesia	· – ·	-
2146061 Second part of Indonesi	Technical Indonesian - Course I. ian Language for Student Exchange Program to Indonesia	Z	2
2144062	Technical Indonesian - Course II.	Z,ZK	3
	nguage for Student Exchange Program to Indonesia	_,	C
2046078	German - Lower Intermediate Course	Z	2
-	arly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking about everyday situations which a student meets in the company or in his/her free time and speaking about every student and speaking about the speaking about every student and speaking about every student a	out them. Writing i	n a simple way
2046079	eading and comprehension of simple texts. Improvement of professional language.	Z	2
	Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic		
	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme		
2046083	German - Advanced Course	Z	2
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in		-
	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compre s from student's field of studies without difficulties. Grammar structures on advanced level.	ehension of popula	ar-scientific and
2046082	German - Advanced Course	7	2
	ten language as well as lectures in German on topics familiar to the student. Communication with native speakers, participati	. – .	_
opinions. Written skills.	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te	chnical articles.	
2046081	German - Upper Intermediate Course	Z	2
	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students o Iking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa		
2046080	German - Upper Intermediate Course		2
	speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ty to describe exp	_
	ne's opinions and plans. Reading and understanding general and technical texts.		
2046076	German - Beginners	Z	2
-	ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profest Framework of Reference for Languages A1.	sional language) I	t corresponds to
2046077	German - Beginners	Z	2
	mmon European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding		
	ology (professional language).		
2046161	Presentations in English	Z	2
Preparing students to pi 2046166	resent in English on technical topics, with a possible co-operation with specialized departments. Presentations in Czech	Z	2
	ive presentations in English on technical topics, with a possible co-operation with specialized departments.	Ζ.	2
2046162	Presentations in German	Z	2
	ng technical topics in German, possibly in cooperation with specialized departments.		
2046164 Preparation for presenti	Presentations in Russian ng technical topics in Russian, possibly in cooperation with specialized departments.	Z	2
2046163 Preparation for presenti	Presentations in French language ng technical topics in French, possibly in cooperation with specialized departments.	Z	2
2046165	Presentations in Spanish	Z	2
	ng technical topics in Spanish, possibly in cooperation with specialized departments.		-
2046137	Russian - Lower Intermediate Course	Z	2
	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 con 2046138	nprehension of simple texts. Improvement of professional language. Russian - Lower Intermediate Course	Z	2
	Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stu		
	about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of profe		
2046141	Russian - Advanced	Z	2
	en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participati		Expressing
	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te		
2046142 Mapped to the level of C	│Russian - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on t	Opics familiar to th	2 e student.
	tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading ar	•	
	Ilar 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 n pout these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understa		-
,		5 gensial and	

2046139 Russian - Upper Intermediate	Z	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 exp	eriences and
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046136 Russian - Beginners	Z	2
Mapped to the level of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	g and use of bas	ic expressions
of general scientific terminology (professional language)		
2046135 Russian - Beginners	Z	2
Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professi	ional language)	
2046099 Spanish - Lower Intermediate	Z	2
Mapped to the level of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a stud	ent meets at sch	ool 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 profess	sional language.	
2046098 Spanish - Lower Intermediate	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. Writi	ing in a simple w	ay about familiar
topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046096 Spanish - Beginners	Z	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	1. Writing in a sim	ple way about
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046097 Spanish - Beginners	Z	2
Mapped to the Common European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s	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	r professional lan	guage.

# List of courses of this pass:

	Name of the course	Completion	Credits
2011009	Mathematics III	Z,ZK	5
	An introductory course in ordinary differential equation and infinite series.		1
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 relation	ons.	•
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		y differentia
	equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference		
2011056	Mathematics I	Z,ZK	8
	ter emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connectio		
will also get to know	v the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas:	eigennumbers and e	eigenvecto
	of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.		
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		<b>e</b> ,
. ,	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, rr, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree		
<b>e</b> 1	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		
neid, independent	Gauss-Ostrogradskij theorem.	or nois intrough a s	
2012035	Algorithmization and Programming Fundamentals	KZ	4
		1	1 -
Programming in I	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat	rices, vectors and c	perations.
Programming in I Writting M-script. Ir		rices, vectors and c ems of linear equat	perations. ions. Script
Programming in I Writting M-script. Ir and functions. St	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Systemet and expression.	rices, vectors and c ems of linear equat tructures. Algorithm	pperations. ions. Script nization of
Programming in I Writting M-script. Ir and functions. St	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S	rices, vectors and c ems of linear equat tructures. Algorithm	pperations. ions. Script nization of
Programming in I Writting M-script. Ir and functions. St simple programs	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e	perations. ions. Script nization of quations.
Programming in I Writting M-script. Ir and functions. St simple programs 2012037	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ	perations. ions. Script nization of quations.
Programming in I Writting M-script. Ir and functions. St simple programs 2012037 2016007 201A009	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ Z ZK	pperations. ions. Script nization of equations. 3 2 2 2
Programming in I Writting M-script. Ir and functions. St simple programs 2012037 2016007	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ Z ZK ZK	perations. ions. Script nization of quations. 3 2
Programming in I Writting M-script. Ir and functions. St simple programs 2012037 2016007 201A009	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ Z ZK ZK	pperations. ions. Script nization of equations. 3 2 2 2
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A021 201A049	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics A	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ ZK ZK ZK ons. ZK	perations. ions. Script nization of equations. 3 2 2 2 3
Programming in I Writting M-script. Ir and functions. St simple programs 2012037 2016007 201A009 201A021	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation.	rices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ Z ZK ZK ons.	perations. ions. Script nization of equations. 3 2 2 2 3 3
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A021 201A049 201A056	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat hiput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable	ices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ ZK ZK ons. ZK ZK	perations. ions. Script nization of equations. 3 2 2 2 3 3
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A021 201A049 201A056 201A062	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A	ices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ Z ZK ZK ons. ZK ZK	perations. ions. Script nization of equations. 2 2 2 3 2 4 4
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A021 201A049 201A056 201A062 Open and closed	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat hiput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A	ices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ ZK ZK ons. ZK ZK ZK tial operators div (d	perations. ions. Script nization of equations. 2 2 2 3 3 2 4 4 ivergence)
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A021 201A049 201A056 201A062 Open and closed and curl (rotation). I	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat hiput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A Set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative.	ices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ ZK ZK ons. ZK ons. ZK tial operators div (c Fubini theorem. Tra	perations. ions. Script nization of equations. 3 2 2 2 3 3 2 4 4 ivergence) ansformatio
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A009 201A021 201A049 201A056 201A062 Open and closed and curl (rotation). I of integrals to pola	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A Set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,	ices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ ZK ZK ons. ZK ons. ZK tial operators div (c Fubini theorem. Tra n's theorem. A pote	perations. ions. Script nization of equations. 3 2 2 3 4 ivergence) ansformatio ential vecto
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A021 201A049 201A056 201A062 Open and closed and curl (rotation). I of integrals to pola field, independent	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matt nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A Set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree	ices, vectors and c ems of linear equat tructures. Algorithm systems of linear e KZ ZK ZK ons. ZK ons. ZK tial operators div (c Fubini theorem. Tra n's theorem. A pote	perations. ions. Script nization of equations. 3 2 2 3 4 ivergence) ansformatio ential vecto
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A009 201A021 201A049 201A056 201A062 Open and closed and curl (rotation). I of integrals to pola field, independent 2021025	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Math hput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, rr, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Flow of a vect Gauss-Ostrogradskij theorem. Physics II.	ices, vectors and c         ems of linear equation         tructures. Algorithm         systems of linear e         KZ         ZK         ZK	perations. ions. Script ization of equations. 3 2 2 3 4 ivergence) ansformatio ential vecto urface. The 4
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A009 201A021 201A049 201A056 201A062 Open and closed and curl (rotation). I of integrals to pola field, independent 2021025 Faraday's law of ele	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat hiput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics II Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A Set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree ce of a line integral on the path. Simple smooth surface and surface integral of a scalar and vector function. Flow of a vect Gauss-Ostrogradskij theorem. Physics II. ectromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of ele	Ices, vectors and c         ems of linear equation         tructures. Algorithm         systems of linear e         KZ         ZK         ZK	perations. ions. Script ization of equations. 3 2 2 3 4 ivergence) ansformatio ential vecto urface. The 4 s. Interactio
Programming in I Writting M-script. Ir and functions. SI simple programs 2012037 2016007 201A009 201A009 201A021 201A049 201A056 201A062 Open and closed and curl (rotation). I of integrals to pola field, independent 2021025 Faraday's law of ele of radiation with m	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Math hput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of Computer Graphics Mathematics I Seminar Mathematics III.A Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relati Numerical Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable Mathematics II.A set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, rr, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Flow of a vect Gauss-Ostrogradskij theorem. Physics II.	Ices, vectors and c         ems of linear equation         tructures. Algorithm         systems of linear e         KZ         ZK         ZK	perations. ions. Scrip nization of equations. 3 2 2 2 3 3 2 4 4 ivergence) ansformatic ential vecto urface. The s. Interactic f elements

2021041	Physics I.	Z,ZK	7
	amics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro		
	chanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co		
nsulators. Magnet	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire measurements of 11 various experiments related to the lectures.	ct measurements,	, regression
2026016	Physics - Seminar	Z	2
202A025	The subject is mainly meant for high-school students for repetition of high-school physics.	ZK	2
	Physics II.A ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of elec		
	atter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and		
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe		
202A041	Physics I.	ZK	3
	amics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	1	-
-	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co		
	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire		
0	measurements of 11 various experiments related to the lectures.		Ū.
2041061	English-Bachelor Exam	Z,ZK	2
	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul		1
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	, I	
2041062	German - Bachelor Exam / FME	Z,ZK	2
	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul		1
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	, I	
2041063	French - Bachelor Exam /FME	Z,ZK	2
	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	1 '	1
	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
	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	1 '	1
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	lied, to take part in	aloodooloite
2041065	Russian - Bachelor Exam / FME	Z,ZK	2
	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul		1
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	loo, to take part in	
2046068	English - Beginners	7	2
	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (	. –	1
			2
2046069	English - Beginners		
apped to the Con	Imon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding of general scientific terminology (professional language).	J and use of basic	expressions
0040070		7	0
2046070	English - Lower Intermediate	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.	whung in a simple	e way about
0040074	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	7	0
2046071	English - Lower Intermediate nmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a s	. –	2
	time and speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improvement		
		_	2
2046072	English - Upper Intermediate I language skills taking into consideration professional English and common professional terminology. Comprehension of standard Er		-
The all is to extern			conversation
0040070	about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2		0
2046073	English - Upper Intermediate	Z	2
	mmon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli		
erminology. Compl	ehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedi	ate level. Broaden	ing gramma
0040074	knowledge.	7	0
2046074	English - Advanced	Z	2
	ension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writte		
level. Ability to wri	te a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's field	of studies without	afficulties.
0040075	Grammar structures on advanced level. B1 - B2.		-
2046075	English - Advanced	Z	2
	mmon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in En		
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	ision of popular-so	cientific and
00/00	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046076	German - Beginners	Z	2
asic vocabulary o	everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession	ai language) It col	rresponds to
	the Common European Framework of Reference for Languages A1.		
2046077	German - Beginners	Z	2
Mapped to the lev	el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an	d use of basic exp	pressions of
	general scientific terminology (professional language).		1
2046078	German - Lower Intermediate Course	Z	2
Aim: Understandin	g clearly what is spoken about everyday situations which a student meets in the company 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.		
		1	
2046079	German - Lower Intermediate Course	Z	2
2046079 Apped to the leve		student meets eith	her at schoo

2046080	German - Upper Intermediate Course	Z	2
Understanding sta	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.	to describe experie	ences and
2046081	German - Upper Intermediate Course	Z	2
	el of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com In talking about these topics. Ability to describe experiences and events, explain one s opinions and plans. Reading and understandir		
2046082	German - Advanced Course	7	2
	of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation	n in discussions. E	
opinions. \	Nritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a	nd technical article	es.
2046083	German - Advanced Course	Z	2
	el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in Ge	•	
and active participa	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehe	ision of popular-sc	ientific and
2046084	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. French - Beginners	7	2
	rly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing		_
	topics. Reading and comprehension of simple texts. Improvement of professional language.	in a onlipio naj az	ournandi
2046085	French - Beginners' Course	Z	2
Mapped to the lev	el of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which a	student meets at s	chool or in
	ne 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	arly 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 ab	out familiar
2046097	topics. Reading and comprehension of simple texts. Improvement of professional language.	7	2
2046087 Mapped to the lev	French - Lower Intermediate Course el of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a	∠ student meets at s	
	te 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
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046089	French - Upper Intermediate	Z	2
	el of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students com		
-	nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandin	ig general and tecl	
2046090	French - Advanced	Z	2
	of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation Nritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a		
2046091	French - Advanced		2
	evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	∠ → bics familiar to the	
	h 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.		
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.	Nriting in a simple	way about
0040007	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046097	Spanish - Beginners ommon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s	Z tudant monte at se	2 bool or in
	the and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046098	Spanish - Lower Intermediate	7	2
	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 at	
-	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046099	Spanish - Lower Intermediate	Z	2
	of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studen		
	nd speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of p	-	-
2046117	Czech -Advanced		2
	spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in disc en skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to		ng opinions.
2046118	Czech -Advanced	Z	2
	I of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec		
	on in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	-	
	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	ofessional langua	
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Com	nmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding of general scientific terminology (professional language).	and use of basic e	expressions
2046125	Czech Lower Intermediate	7	2
	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	- 1	
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	5	,
2046126	Czech Lower Intermediate	Z	2
	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.		
2046127	Czech - Upper Intermediate	Z	2
Understanding sta	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	ences and
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		

	Czech - Upper Intermediate	Z	2
	non European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cze		-
terminology. Comp	rehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interme	ediate level. Broad	lening the
	knowledge technical language.		
2046135	Russian - Beginners	Z	2
Basic vocat	ulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (pr	ofessional langua	ge)
2046136	Russian - Beginners	Z	2
Mapped to the level	of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding a	and use of basic e	xpressions
	of general scientific terminology (professional language)		
2046137	Russian - Lower Intermediate Course	Z	2
Understanding clear	y 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 al	bout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
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 studen	t meets at school	or in his/her
free time an	d speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of p	rofessional langua	age.
2046139	Russian - Upper Intermediate	7	2
	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability t	to describe experi	1
	events, briefly explain one 's opinions and plans. Reading and understanding general and technical texts.		
2046140	Russian - Upper Intermediate	Z	2
1	I of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student mee		1
	g about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understanding		-
		<b>7</b>	-
2046141	Russian - Advanced		
	spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation		
	ritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a		
2046142	Russian - Advanced	Z	2
	rel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to		
Communication with	native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and ur	nderstanding texts	concerning
	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
	Improving communicative skills in speaking on general topics and general technical topics.		
2046161	Presentations in English	Z	2
I	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.		I
2046162	Presentations in German	Z	2
2010102	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.	-	-
2046163	Presentations in French language	Z	2
2040103	Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.	2	2
2046164		7	2
2046164	Presentations in Russian	Z	2
	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.		-
2046165	Presentations in Spanish	Z	2
	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.		
2016166	Descentations in Oceah		
2046166	Presentations in Czech	Z	2
2040100	Presentations in Czecn Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departme	nts.	2
2112092			2
· · · · ·	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departme	nts.	
2112092 2122092	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departme Department Project	KZ KZ	4
2112092 2122092 Th	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the	nts. KZ KZ department.	4
2112092 2122092 Th 2131002	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II	nts. KZ department. Z,ZK	4 4 4
2112092 2122092 Th 2131002 Principles of ISO GF	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t	nts. KZ department. Z,ZK exture, geometric:	4 4 4 al tolerance,
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their	nts. KZ department. Z,ZK exture, geometrica r knowledge from	4 4 al tolerance, lectures.
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II	nts. KZ department. Z,ZK exture, geometric: r knowledge from ZK	4 4 al tolerance, lectures. 3
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p	nts. KZ department. Z,ZK exture, geometric: r knowledge from ZK	4 4 al tolerance, lectures. 3
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, o	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings.	nts. KZ department. Z,ZK exture, geometric: r knowledge from ZK ipelines and their	4 4 al tolerance, lectures. 3 accessories
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, o 2131120	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures	nts. KZ department. Z,ZK exture, geometric: r knowledge from ZK ipelines and their Z,ZK	4 4 al tolerance, lectures. 3 accessories 6
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor' work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II lesign calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I.	nts. KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK Z,ZK	4 4 al tolerance, lectures. 3 accessories 6 6
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512 Joints and joining ele	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I. ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, kee	nts. KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK Z,ZK ys). Mechanical tra	4 4 al tolerance, lectures. 3 accessories 6 6 ansmissions
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512 Joints and joining ele (belt, chain, frictio	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I. ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, key n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded	nts. KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK Z,ZK ys). Mechanical tra connecting bolts,	4 4 al tolerance, lectures. 3 accessories 6 6 ansmissions clamped,
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512 Joints and joining ele (belt, chain, frictio	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I. ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, key n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded l key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assem	nts. KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK Z,ZK ys). Mechanical tra connecting bolts,	4 4 al tolerance, lectures. 3 accessories 6 6 ansmissions clamped,
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512 Joints and joining ele (belt, chain, frictio pressed, splined and	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I. ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, key n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded l key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assem seminar work.	nts. KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK Z,ZK ys). Mechanical tra connecting bolts, bly units is also in	4 4 al tolerance, lectures. 3 accessories 6 6 ansmissions clamped, dispensable
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512 Joints and joining ele (belt, chain, frictio pressed, splined and 2132092	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project a content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface t s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I. ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, key n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded lexy joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assem seminar work. Project	nts. KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK ys). Mechanical tra connecting bolts, bly units is also in KZ	4 4 al tolerance, lectures. 3 accessories 6 6 ansmissions clamped, dispensable 4
2112092 2122092 Th 2131002 Principles of ISO GF dimensional loop 2131026 Preliminary design, of 2131120 2131512 Joints and joining ele (belt, chain, frictio pressed, splined and 2132092 Elaboration of sem	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department Department Project Department Project a content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the Engineering Design II S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface te s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their Machine Elements and Mechanisms II design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, p and fittings. Design of Steel Structures Machine Elements and Mechanisms I. ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, kee n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded lexe joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assem seminar work. Project	nts. KZ KZ department. Z,ZK exture, geometrica r knowledge from ZK ipelines and their Z,ZK Z,ZK ys). Mechanical tra connecting bolts, bly units is also in KZ arbox provided wit	4 4 al tolerance, lectures. 3 accessories 6 6 ansmissions clamped, dispensable 4 h two pairs
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2141504			
	Electric Circuits and Electronics	Z,ZK	4
Introduction into t	heory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of e	energy. El. Power	and Energy
Introduction into	electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize	r, power control, o	perational
	amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro	cessor.	_
2141505	Electrical machines and drives	Z,ZK	4
C el. curcuits. El	ectrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transf	ormer, principle, c	constructio
3-phase transfor	rmer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-	torque characteris	stic, speec
ontrol. Synchrono	bus machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque character	istic. Low-voltage	instrumer
	Low-voltage distribution system.		
2144062	Technical Indonesian - Course II.	Z,ZK	3
	Basic of Indonesian Language for Student Exchange Program to Indonesia	-	
2146060	Indonesian Language Course for Exchange	Z	2
	Basic of Indonesian Language for Student Exchange Program to Indonesia	_	
2146061	Technical Indonesian - Course I.	Z	2
	Second part of Indonesian Language for Student Exchange Program to Indonesia	1/7	
2152091	Deparmental Project	KZ	2
2153005	Fundamentals of Energy Conversions	Z	1
2153091	Presentation of Project	Z	4
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
Fundamentals of	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical	energy equation.	Residenc
ne distributions ir	n continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and the	rmal radiation. Mu	lticompon
	systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2182019	Chemistry	KZ	3
	ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties		-
phase equilibriur	m, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher	mistry. Laboratory	practice i
	oriented upon the material properties measurement.		
2182091	Project	KZ	2
	Absolvent se seznámí se základy oboru Procesní technika.		
2183091	Project Presentation	Z	4
	Preparation and presentation of a given project theme.		
2211581	Transmissions	Z,ZK	5
	les a general summary of transmissions for various applications which the student in the specialization designer-calculator meets. The		
and trans	sport machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission devic	es of motor vehicl	es.
2212092	Project	KZ	4
	Basic practical skills of work with advanced CAD/CAE/CAM systems. Project training in solution of design task based on industry rec	quirements.	
2311073	Simulation of Mechanical Systems	Z,ZK	6
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 systematics and the statics.	, ,	· ·
		stems with and with	· ·
	with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their systematics and the statics.	, ,	· ·
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2371047	Automatic Control	 Z,ZK	5
	ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automati	,	-
	is, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrat		•
	e logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained.	•	
1 0	MATLAB software as a common platform of control engineers.	0	
2372041	Computer Support for Study	KZ	3
The course introduc	ces students into creating technical and professional documents on computers or Web and into realizing technical computations with the	he use of compute	rs. Student
gain practica	al skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technic	cal-based WWW	bage.
2372083	Measurement in Engineering	KZ	3
Overview of sens	sor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and v	verification of mea	surement
	instruments.		
2372091	Project	KZ	2
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