Study plan

Name of study plan: 05 40 45 46 BSTR TZP 2012 K 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 combined Required credits: 264 Elective courses credits: -26 Sum of credits in the plan: 238 Note on the plan: první pokus

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 222 The role of the block: P

Code of the group: 12B-KMENK TZI STR Name of the group: 01 2012 souhrn skupin 12B*KiP-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 g	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
2371047	Automatic Control Milan Hofreiter, R žena Petrová, Tomáš Vyhlídal, Jaromír Fišer Tomáš Vyhlídal Tomáš Vyhlídal (Gar.)	Z,ZK	5	3P+15C+051	*	Р
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna, Jan Sko ilas Radek Šulc Radek Šulc (Gar.)	КZ	3	2P+1C	1	Ρ
2131512	Machine Elements and Mechanisms I. František Lopot	Z,ZK	6	3P+2C	*	Ρ
2131026	Machine Elements and Mechanisms II Eliška Cézová, Zden k ešpíro, Martin Dub, Jan Flek, Ji í Houkal, Jan Kanaval, František Lopot, Karel Petr František Lopot František Lopot (Gar.)	ZK	3	3P+0C	*	Ρ
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák Zuzana Sedlecká Jan Chyský (Gar.)	Z,ZK	4	2P+08C+14	*	Ρ
2141505	Electrical machines and drives Jan Chyský, Jaroslav Novák, Lukáš Novák Jaroslav Novák Jaroslav Novák (Gar.)	Z,ZK	4	2P+08C+14	*	Ρ
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	*	Р
2011056	Mathematics I Radka Keslerová, Marta Hlavová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Nikola Pajerová, Petr Louda, Lukáš Hájek, Radka Keslerová Gejza Dohnal (Gar.)	Z,ZK	8	4P+4C	*	Ρ
2011062	Matematika II. Radka Keslerová	Z,ZK	8	4P+4C	*	Ρ
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	*	Р
2311102	Mechanics II. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Václav Bauma Václav Bauma (Gar.)	Z,ZK	4	2P+2C	*	Р
2322029	Materials Science I. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková Jana Sobotová Jana Sobotová (Gar.)	ΚZ	3	2P+1L	2	Р
2321039	Materials Science II. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková, Jan Walter, Jana Sobotová Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2011049	Numerical Mathematics Radka Keslerová, Ji í Holman, Marta ertíková, Vladimír Hric, Petr Louda, Lukáš Hájek, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Petr Svá ek Petr Svá ek (Gar.)	Z,ZK	4	2P+2C	4	Ρ
2012037	Computer Graphics Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka Ivana Linkeová Ivana Linkeová (Gar.)	ΚZ	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 lohlav, Stanislav Solna, Jan Sko ilas, Tomáš Jirout, Adam Krupica, Ji í Moravec Tomáš Jirout Tomáš Jirout (Gar.)	Z,ZK	5	3P+1C	*	Р
2131002	Engineering Design II Eliška Cézová, Martin Dub, Jan Flek, Jan Kanaval, František Lopot, Karel Petr, Martin Havlí ek, Jan Hoidekr, Roman Uhlí Karel Petr Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Р
2133013	Engineering Design III. Jan Kanaval, František Lopot, Jan Hoidekr, David Skalický, Roman Uhlí Jan Kanaval Jan Kanaval (Gar.)	Z	2	0P+2C	Z	Р
2133014	Engineering Design IV. František Lopot František Lopot (Gar.)	Z	2	0P+2C	L	Р
2372083	Measurement in Engineering Martin Novák, Vladimír Hlavá Martin Novák Martin Novák (Gar.)	KZ	3	1P+0C+2L	*	Р
K331068	Technology I	Z,ZK	5	16B	*	Р
K341014	Technology II.	Z,ZK	5	8KP+8KC	*	Р
2012035	Algorithmization and Programming Fundamentals Ji í Holman, Marta ertíková, Vladimír Hric, Lukáš Hájek, Jan Halama, Vladimír Prokop, Martin Hanek, Jan Karel, Josef Musil, Petr Svá ek Petr Svá ek (Gar.)	KZ	4	1P+2C	*	Р
2153005	Fundamentals of Energy Conversions	Z	1	1P+1C	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12B-KMENK TZI STR Name=01 2012 souhrn skupin 12B*KiP-KMEN pro i od 1 do 6

2371047	Automatic Control	Z,ZK	5
Automatic controllers a	e important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of autom	atic control theory	/ and practice
like transfer functions, c	pen versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concer	trates on logic co	ntrol and control
via programmable logic	controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained	. Students begin t	o work with
MATLAB software as a	common platform of control engineers.		
2182019	Chemistry	KZ	3
General chemistry from	the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and propertie	es of matter, therr	nodynamics,
phase equilibrium, cher	nical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and bioche	emistry. Laborator	y practice is
oriented upon the mate	rial properties measurement.		
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
Joints and joining eleme	nts (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters	, keys). Mechanic	al transmissions
(belt, chain, friction, gea	ar drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloade	d connecting bolt	s, clamped,
pressed, splined and ke	y joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple as	sembly units is als	so indispensable
seminar work.			
2131026	Machine Elements and Mechanisms II	ZK	3
Preliminary design, des	ign calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanisi	n, pipelines and t	heir accessories
and fittings.			
2141504	Electric Circuits and Electronics	Z,ZK	4
Introduction into theory	of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of	of energy. El. Powe	er and Energy.
Introduction into electro	nics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize	r, power control,	operational
amplifier). Analogue an	d digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprocessor.		
2141505	Electrical machines and drives	Z,ZK	4
AC el. curcuits. Electric	a power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Tra	nsformer, principle	e, construction,
3-phase transformer, of	perating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed	-torque character	ristic, speed
control. Synchronous m	achines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque charac	cteristic. Low-volta	age instruments.
Low-voltage distribution	i system.		

2021041 Kinematics and dynami	Physics I. cs of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic	Z,ZK properties of bod	7 lies. Oscillations,
	b. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co d. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and incomentation.		
	rious experiments related to the lectures.		
2021025 Faraday's law of electron	Physics II. nagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	Z,ZK electromagnetic w	4 aves. Interaction
	Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e		
2133025	Design	Z	4
	ions and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft couplings and		6
2011021 The subject is focused	Constructive Geometry on geometry curves, surfaces and solids and their properties and mutual relations.	Z,ZK	6
2381054	Management and Economics of the Enterprise	Z,ZK	4
	to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the s		hem understand
	between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audi		
-	inizations. every product or service is valued at a selling price and therefore it is necessary to understand the simple costing or reports and should understand the basic structure of financial statements. As a future manager, he will compile and approv	-	-
	ill learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project mar		-
	n the applications of multi-criteria decision-making. The basics of marketing and strategic management will be introduced.		
2011056	Mathematics I mphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connect	Z,ZK	8 Studente
-	procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic area		
-	iomial, integral as a limit function, integration of some special functions.	<u>j</u>	<u>.</u>
2011062	Matematika II.	Z,ZK	8
	oundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differe	-	
	tion given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ indrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr		
	a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a ve		-
Gauss-Ostrogradskij th			
2011009	Mathematics III	Z,ZK	5
	in ordinary differential equation and infinite series.		
2311101 Machanica I deale with	Mechanics I.	Z,ZK	4
	the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their e methods of description of position and motion of particles and rigid bodies.	systems with and	a without inction.
2311102	Mechanics II.	Z,ZK	4
	of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motio		n, screw motion,
• ·	Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and	ector method. Gr	aphical methods
	ory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms.	1/7	2
2322029 History and present sta	Materials Science I. te of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, def	KZ prmation, recrysta	3 allization and
	ructure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, ir		
2321039	Materials Science II.	Z,ZK	4
	urgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal ar	d thermo-mechar	nical processing,
	loys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.	7 71/	4
2011049 Numerical solution of sv	Numerical Mathematics stems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Nume	Z,ZK	-
-	pundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.		
2012037	Computer Graphics	KZ	3
2372041	Computer Support for Study	KZ	3
	students into creating technical and professional documents on computers or Web and into realizing technical computations w reating 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	je. 5
	province normalized in the contract of the con		
time distributions in con	tinuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and	thermal radiation.	Multicomponent
-	by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2131002	Engineering Design II Competing Products Specification) Students will get critical knowledge about ISO system of limits and fits televancing, surf	Z,ZK	4
	Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surfa rancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	-	
2133013	Engineering Design III.	Z	2
	t (draft drawing, detail drawing, assembly drawing, technical report)	_	-
2133014	Engineering Design IV.	Z	2
2372083 Overview of sensor prin	Measurement in Engineering iciples for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	KZ	3
instruments.	יסוףכי וסי הוכמסטרפורופות טי חטריפופטורטמו אמחמטופי (נפוווףפומנטרפ, אסטונטוו, וטוטפ, אףפט, מטטפופומנוטוו, נטועטפ). כמונטומנוטח מונ		aourement
K331068	Technology I	Z,ZK	5
	etals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of I	•	
heating-up, Cutting, Col	d and bat forming Wolds Woldshility Woldmant testing Thermal outling Presing Surface treatment		
K341014	d and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatment. Technology II.	Z,ZK	5

2012035	Algorithmization and Programming Fundamentals	KZ	4					
Programming in MATLA	Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matrices, vectors and operations.							
Writting M-script. Input	and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Sy	stems of linear e	quations. Scripts					
and functions. Structure	of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S	Structures. Algorit	nmization of					
simple programs: minim	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					
Basic orientation in lega	Basic orientation in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provide a view into the Czech Legal							
Order, particular source	es of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It i	s necessary for s	tudents to know					
our legal institutions, the	at will be regularly in touch with, especially during their professional career and to learn how to work with the collection of law	s. At the same tir	ne the course					

leads students to know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relationships and to make them ready

Code of the group: 12B*K*P-ZT12

Name of the group: 04 2012 kombinované ZT v po adí 12

to prepare professional presentations and to understand basic structures between law and engineering

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:

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
K333038	Fundamentals of Technology I.	Z	3	8B	*	Р

Characteristics of the courses of this group of Study Plan: Code=12B*K*P-ZT12 Name=04 2012 kombinované ZT v po adí 12

K333038

Fundamentals of Technology I.

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

3

Ζ

Code of the group: 12BS*7P-TZP

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

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 30

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
2151158	Principles of Refrigerating Technology and Heat Pumps	Z,ZK	5	2P+2C	*	Р
2161596	Fundamentals of Heating	Z,ZK	5	3P+1C	*	Р

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

2151158	Principles of Refrigerating Technology and Heat Pumps	Z,ZK	5
2161596	Fundamentals of Heating	Z,ZK	5
Basic knowledge acquis	sition from the field of heating of residential and industrial buildings. Designing of convective and radiant heating systems.		

Code of the group: 12BS*8P-TZP

Name of the group: 13 2012 BSTR 8.sem povinné TZP

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 30

Note on the aroup:

	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
2162023	Basics of alternative energy sources	KZ	4	2P+2C+0L	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BS*8P-TZP Name=13 2012 BSTR 8.sem povinné TZP

2162023	Basics of alternative energy sources	KZ	4
Principles and basics of	$^{ m f}$ alternative energy sources applications. Solar energy. Heat pumps. Biomass utilization.		

Name of the block: Compulsory elective courses Minimal number of credits of the block: 10 The role of the block: PV

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

Name of the group: 03 2012 bakalá ské povinn volitelné humanitární Requirement credits in the group: In this group you have to gain at least 2 credits (at most 6) Requirement courses in the group: In this group you have to complete at least 1 course (at most 3) Credits in the group: 2

Note on the group:

Ze skupiny humanitních předmětů nutno j e d e n absolvovat

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2383009	Communication and Dealing with People Vladimír Brdek, Jan 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.

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					
Aapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussio								
to write a summary	a report and an essay, to read technical texts, to master grammar at advanced level.							
2041063	French - Bachelor Exam /FME	Z,ZK	2					
Mapped to the Com	Aapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussic							
to write a summary	a report and an essay, to read technical texts, to master grammar at advanced level.							
2041062	German - Bachelor Exam / FME	Z,ZK	2					
Mapped to the Com	Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussio							
to write a summary	a report and an essay, to read technical texts, to master grammar at advanced level.							
2041065	Russian - Bachelor Exam / FME	Z,ZK	2					
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater dif	ficulties, to take pa	art in discussions					
to write a summary	a report and an essay, to read technical texts, to master grammar at advanced level.							

2041064	Spanish - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discu						
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.					

Code of the group: 12BS*6Q-OP Name of the group: 10 2012 BSTR 6. sem oborové projekty Requirement credits in the group: In this group you have to gain 2 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 2 Note on the group:

Student si vybere předmět příslušný oboru, který studuje

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2372091	Project	KZ	2	0P+2C	*	PV
2362091	Project	KZ	2	0P+2C	*	PV
2152091	Deparmental Project	KZ	2	0P+2C	*	PV
2182091	Project Tomáš Jirout	KZ	2	0P+2C	*	PV

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

2372091	Project	KZ	2			
An individual project fro	n individual project from the branch of specialisation, which student will study on his/her magister level					
2362091	362091 Project KZ 2					
2152091	Deparmental Project	KZ	2			
2182091	Project	KZ	2			
Absolvent se seznámí s	Absolvent se seznámí se základy oboru Procesní technika.					

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

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

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

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

Credits in the group: 4

Note on the group:

2363091 nesepsán Student si vybere předmět příslušný oboru, který studuje

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2153091	Presentation of Project	Z	4	4B	*	PV
2363091	Project Presentation	Z	4	4B		PV
2373091	Project presentation	Z	4	4B	*	PV
2183091	Project Presentation Tomáš Jirout	Z	4	0P+4C	*	PV

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

2153091	Presentation of Project	Z	4				
2363091	Z	4					
2373091	Project presentation	Z	4				
Diploma thesis or bache	Diploma thesis or bachelor work presentation. Student should study the presentation software possibilities and proposition of the department. Student should prepare the presentation						
of actual version of his	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. Consequently, the work should be						
presented as a pdf file of	presented as a pdf file on a temporal web page.						
2183091	Project Presentation	Z	4				
Preparation and presen	Preparation and presentation of a given project theme.						

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

Code of the group: 12BS**V-ALFA Name of the group: 02 2012 ALFA volitelné pro STR Requirement credits in the group: In this group you have to gain 32 credits Requirement courses in the group: In this group you have to complete 12 courses Předměty typu Alfa (A) nejsou u studijního programu B2341 Strojírenství povinné, avšak jsou povinné u studijního programu B2342 Teoretický základ strojního inženýrství.

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
202A041	Physics I.	ZK	3	0P+0L	*	V
202A025	Physics II.A	ZK	2	0P+0C	*	V
201A021	Constructive Geometry A Ivana Linkeová	ZK	3	0P+0C	*	V
201A056	Mathematics I.A Radka Keslerová	ZK	4	0P+0C	*	V
201A062	Mathematics II.A Radka Keslerová	ZK	4	0P+0C	*	V
201A009	Mathematics III.A Stanislav Kra mar	ZK	2	0P+0C	*	V
201A049	Numerical Mathematics A Lud k Beneš	ZK	2	0P+0C	*	V

Characteristics of the courses of this group of Study Plan: Code=12BS**V-ALFA Name=02 2012 ALFA volitelné pro STR

202A041	Physics I.	ZK	3				
Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic properties of bodies. Oscillations,							
waves. Fluid mechanics	waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors,						
insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression,							
measurements of 11 various experiments related to the lectures.							
202A025	Physics II.A	ZK	2				
Faraday's law of electror	nagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic w	aves. Interaction				
of radiation with matter.	Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a	nd periodic syster	n of elements.				
Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures.							
201A021	Constructive Geometry A	ZK	3				
The subject is focused of	on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.						
201A056	Mathematics I.A	ZK	4				
Introduction to linear alg	gebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable						
201A062	Mathematics II.A	ZK	4				
Open and closed set, be	oundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differe	ntial operators div	v (divergence)				
and curl (rotation). Funct	ion given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integr	ral, Fubini theoren	n. Transformation				
of integrals to polar, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green's theorem. A potential vector							
field, independence of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector field through a surface. The							
Gauss-Ostrogradskij theorem.							
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

The subject is mainly meant for high-school students for repetition of high-school physics.	2026016	Physics - Seminar	Z	2
2016007 Mathematics L. Sominar 7	The subject is mainly m			
	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	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
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	Z	2	0P+2C	z	v
2046079	Schusová Michaela Schusová (Gar.) German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046083	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	v
2046082	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046081	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	v
2046080	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046076	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich 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 Dušana Jirovská	Z	2	0P+2C	L	V
2046140	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046139	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046136	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046135	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046099	Spanish - Lower Intermediate Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V
2046098	Spanish - Lower Intermediate Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046096	Spanish - Beginners Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046097	Spanish - Beginners Michaela Schusová, Jaime Andrés Villagómez Jaime Andrés Villagómez Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V

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

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.			

0040074	For effects of the second state	7	0
2046071	English - Lower Intermediate	Z	2
Mapped to the Commo	European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which	a student meets e	either at school
or at his/her free time a	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvem	ent of professiona	I language.
2046070	English - Lower Intermediate	Z	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	I – I	
-	and comprehension of simple texts. Improvement of professional language. A1 - A2.		ipio way about
			-
2046074	English - Advanced	Z	2
The aim: comprehension	n of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writ	ten and oral skills	on advanced
level. Ability to write a s	ummary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's fie	eld of studies witho	out difficulties.
Grammar structures on	advanced level. B1 - B2.		
2046075	English - Advanced	7	2
		ı — ı	_
	n European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in E		
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 text	s from student's field of studies without difficulties. Grammar structures on advanced level.		
2046072	English - Upper Intermediate	Z	2
	guage skills taking into consideration professional English and common professional terminology. Comprehension of standard	–	- 1
		a English speech a	
	/ 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 Commo	European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional En	glish and commor	n professional
terminology. Comprehe	nsion of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on interm	nediate level. Broa	dening grammar
knowledge.			55
2046068	English - Beginners	Z	2
Aim: Basic vocabulary	f 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
	European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	I – I	_
		iuling and use of be	asic expressions
-	ninology (professional language).	· · · · · · · · · · · · · · · · · · ·	
2046126	Czech Lower Intermediate	Z	2
Aim: Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a sin	nple way about
familiar topics. Reading	and comprehension of simple texts. Improvement of professional language.	-	
2046125		7	2
	Czech Lower Intermediate	<u> </u>	
Aim: Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	em. Writing in a sin	nple way about
familiar topics. Reading	and comprehension of simple texts. Improvement of professional language.		
2046118	Czech -Advanced	Z	2
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in C	I – I	
		-	
	discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehen	ision of popular-sc	ienuiic and
scientific articles or text	s from student's field of studies without difficulties. Grammar structures on advanced level.		
2046117	Czech -Advanced	Z	2
Comprehension of spok	en language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	discussions. Expr	essing opinions.
	vrite an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical a	-	5 9 9 9
		1 1	
2046127	Czech - Upper Intermediate	Z	2
Understanding standard	I 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
events, briefly explain o	ne's opinions and plans. Reading and understanding general and technical texts.		
2046128	Czech - Upper Intermediate	Z	2
		I I	
	European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional		-
terminology. Comprehe	nsion of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter	mediate level. Bro	adening the
knowledge technical lar	guage.		
2046119	Czech Language for Beginners I.	Z	2
	ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	I – I	-
2046120	Czech Language for Beginners II.	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 terr	ninology (professional language).		
2046086	French - Lower Intermediate Course	Z	2
		1 – 1	
	hat 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 wa	ay about familiar
topics. Reading and cor	nprehension of simple texts. Improvement of professional language.		
2046087			2
Mapped to the level of (French - Lower Intermediate Course	Z	
		I I	at school or in
his/her free time and en	Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which	a student meets a	
	common European Framework of Reference: A2 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	a student meets a of professional lan	guage.
2046091	Common European Framework of Reference: A2 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 French - Advanced	a student meets a of professional lan	guage. 2
2046091	common European Framework of Reference: A2 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	a student meets a of professional lan	guage. 2
2046091 Mapped to the level of 0	Common European Framework of Reference: A2 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 French - Advanced	a student meets a of professional lan Z pics familiar to the	guage. 2 student.
2046091 Mapped to the level of (Communication with na	Common European Framework of Reference: A2 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 French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and	a student meets a of professional lan Z pics familiar to the	guage. 2 student.
2046091 Mapped to the level of Communication with na currant issues and popul	Common European Framework of Reference: A2 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 French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and lar scientific and technical articles.	a student meets a of professional lan Z pics familiar to the nd understanding t	guage. 2 e student. texts concerning
2046091 Mapped to the level of 0 Communication with na currant issues and popu 2046090	Common European Framework of Reference: A2 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 French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading ar ilar scientific and technical articles.	a student meets a of professional lan Z pics familiar to the nd understanding t	guage. 2 e student. texts concerning 2
2046091 Mapped to the level of 0 Communication with na currant issues and popu 2046090 Comprehension of spol	Common European Framework of Reference: A2 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 French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading an lar scientific and technical articles. French - Advanced en language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation	a student meets a of professional lan Z pics familiar to the nd understanding t Z n in discussions. E	guage. 2 e student. texts concerning 2
2046091 Mapped to the level of 0 Communication with na currant issues and popu 2046090 Comprehension of spol	Common European Framework of Reference: A2 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 French - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading ar ilar scientific and technical articles.	a student meets a of professional lan Z pics familiar to the nd understanding t Z n in discussions. E	guage. 2 e student. texts concerning 2
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2046084	French - Beginners	Z	2
	hat is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri		_
а <i>,</i>		ung in a simple wa	ay about familiar
	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		
his/her free time and sp	eaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	of professional lan	guage.
2146060	Indonesian Language Course for Exchange	Z	2
Basic of Indonesian La	guage for Student Exchange Program to Indonesia		
2146061	Technical Indonesian - Course I.	Z	2
	an Language for Student Exchange Program to Indonesia	I	
2144062	Technical Indonesian - Course II.	Z,ZK	3
	guage for Student Exchange Program to Indonesia	2,21	5
		-	
2046078	German - Lower Intermediate Course	Z	2
-	rrly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking abc	but them. Writing i	n a simple way
about familiar topics. Re	ading and comprehension of simple texts. Improvement of professional language.		
2046079	German - Lower Intermediate Course	Z	2
Mapped to the level of (common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which	h a student meets	either at school
	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvemen		
2046083	German - Advanced Course	7	2
			_
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in		~ I
	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compre	mension of popula	ar-scientific and
	s from student's field of studies without difficulties. Grammar structures on advanced level.	r	
2046082	German - Advanced Course	Z	2
Comprehension of spol	en language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation	on in discussions.	Expressing
opinions. Written skills.	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and 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 co	- 1	_
-	king about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa		
2046080	German - Upper Intermediate Course	Z	2
Understanding standar	speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abilit	ty to describe exp	eriences and
events, briefly explain o	e's opinions and plans. Reading and understanding general and technical texts.		
2046076	German - Beginners	Z	2
Basic vocabulary of eve	ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess	sional language) l	t corresponds to
-	Framework of Reference for Languages A1.	J	
2046077	German - Beginners	7	2
	5	- 1	
	nmon European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding a	and use of basic e	expressions of
	ology (professional language).		
2046161	Presentations in English	Z	2
Preparing students to p	esent in English on technical topics, with a possible co-operation with specialized departments.		
2046166	Presentations in Czech	Z	2
Preparing students to g	ve presentations in English on technical topics, with a possible co-operation with specialized departments.	I	
2046162	Presentations in German	Z	2
	ing technical topics in German, possibly in cooperation with specialized departments.	~	2
		-	
2046164	Presentations in Russian	Z	2
	ng technical topics in Russian, possibly in cooperation with specialized departments.		
2046163	Presentations in French language	Z	2
Preparation for present	ng technical topics in French, possibly in cooperation with specialized departments.	'	
2046165	Presentations in Spanish	Z	2
	ng technical topics in Spanish, possibly in cooperation with specialized departments.	- 1	-
		Z	
2046137	Russian - Lower Intermediate Course	- 1	2
	hat is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	ting in a simple wa	ay about familiar
	nprehension of simple texts. Improvement of professional language.		
2046138			
	Russian - Lower Intermediate Course	Z	2
Mapped to the level of (I	
	Russian - Lower Intermediate Course	dent meets at sch	
free time and speaking	Russian - Lower Intermediate Course 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 profes	ident meets at sch ssional language.	ool or in his/her
free time and speaking 2046141	Russian - Lower Intermediate Course 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 profes Russian - Advanced	ident meets at sch ssional language. Z	lool or in his/her
free time and speaking 2046141 Comprehension of spok	Russian - Lower Intermediate Course 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 profes Russian - Advanced en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation	dent meets at sch ssional language. Z on in discussions.	lool or in his/her
free time and speaking 2046141 Comprehension of spol opinions. Written skills.	Russian - Lower Intermediate Course 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 profes Russian - Advanced en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participati Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te	dent meets at sch ssional language. Z on in discussions. chnical articles.	lool or in his/her 2 Expressing
free time and speaking 2046141 Comprehension of spol opinions. Written skills. 2046142	Russian - Lower Intermediate Course 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 profes Russian - Advanced en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te Russian - Advanced	Ident meets at sch ssional language. Z on in discussions. chnical articles. Z	2 Expressing 2
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free time and speaking 2046141 Comprehension of spol opinions. Written skills. 2046142 Mapped to the level of C Communication with na currant issues and popu 2046140	Russian - Lower Intermediate Course 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 profest Russian - Advanced en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participatin Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te Russian - Advanced Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on topics familions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te Russian - Advanced common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to ive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading an lar scientific and technical articles.	Ident meets at sch ssional language. Z on in discussions. chnical articles. Z opics familiar to th id understanding t	2 Expressing 2 e student. exts concerning 2
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free time and speaking 2046141 Comprehension of spol opinions. Written skills. 2046142 Mapped to the level of 0 Communication with na currant issues and popu 2046140 Mapped to the level of 0 free time, and talking at 2046139	Russian - Lower Intermediate Course 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 profest Russian - Advanced en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te Russian - Advanced common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and understanding standard speech about familiar matters that a student mout these topics. Ability to describe experiences and events, briefly explain one 's opinions and plans. Reading and understata Russian - Upper Intermediate	Ident meets at sch ssional language. Z on in discussions. chnical articles. Z opics familiar to th ad understanding to Z neets at work, at s nding general and Z	2 Expressing 2 e student. exts concerning 2 chool, during technical texts. 2
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free time and speaking 2046141 Comprehension of spol opinions. Written skills. 2046142 Mapped to the level of 0 Communication with na currant issues and popu 2046140 Mapped to the level of 0 free time, and talking al 2046139 Understanding standard events, briefly explain o 2046136 Mapped to the level of 0	Russian - Lower Intermediate Course 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 profest Russian - Advanced en language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation while an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te Russian - Advanced common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to two speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and understanding standard speech about familiar matters that a student mout these topics. Ability to describe experiences and events, briefly explain one 's opinions and plans. Reading and understanding general and technical texts.	Ident meets at sch assional language. Z on in discussions. chnical articles. Z opics familiar to th ad understanding to Reets at work, at s nding general and Z ty to describe exp Z	2 Expressing 2 e student. exts concerning 2 chool, during technical texts. 2 eriences and 2

2046135	Russian - Beginners	Z	2
Basic vocabulary of eve	ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess	sional language)	I —
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	dent 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 profes	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. Writing in a simple way 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. Writing in a simple 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 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.			

List of courses of this pass:

Code	Name of the course	Completion	Credits	
2011009	Mathematics III	Z,ZK	5	
	An introductory course in ordinary differential equation and infinite series.			
2011021	Constructive Geometry	Z,ZK	6	
	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual 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	solution of ordinar	y differential	
	equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference	method.		
2011056	Mathematics I	Z,ZK	8	
In the course, great	ter emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connection	s between concep	ts. Students	
will also get to know	the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: e	igennumbers and e	eigenvectors	
	of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.			
2011062	Matematika II.	Z,ZK	8	
Open and closed	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different	ial operators div (d	ivergence)	
,	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 Greer			
field, independent	te of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector	or field through a su	urface. The	
	Gauss-Ostrogradskij theorem.			
2012035	Algorithmization and Programming Fundamentals	KZ	4	
Programming in I	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matri	ces, vectors and o	perations.	
	put and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste	•		
	ructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. St	-		
simple programs	:: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of s	systems of linear e	quations.	
2012037	Computer Graphics	KZ	3	
2016007	Mathematics I Seminar	Z	2	
201A009	Mathematics III.A	ZK	2	
201A021	Constructive Geometry A	ZK	3	
	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation	ons.		
201A049	Numerical Mathematics A	ZK	2	
201A056	Mathematics I.A	ZK	4	
	Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable	-		
201A062	Mathematics II.A	ZK	4	
Open and closed	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different	ial operators div (d	ivergence)	
and curl (rotation). F	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,	Fubini theorem. Tra	Insformation	
0 1	r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Greer			
field, independence of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector field through a surface. The				
	Gauss-Ostrogradskij theorem.		1	
2021025	Physics II.	Z,ZK	4	
-	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetics and the second	-		
	atter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and			
Spectra, x-rays, ;las	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe		he lectures.	
2021041	Physics I.	Z,ZK	7	
	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro			
	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co			
insulators. 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	
	The subject is mainly meant for high-school students for repetition of high-school physics.	I	I	

202A025	Physics II.A	ZK	2	
	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic values of electromagnetic va	•		
of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements.				
Spectra, x-rays, ;las	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expension	iments related to the	he lectures.	
202A041	Physics I.	ZK	3	
Kinematics and dyn	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	perties of bodies.	Oscillations,	
	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			
	measurements of 11 various experiments related to the lectures.	·····,	· J	
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 difficult	, , ,		
		les, lo lake part in c		
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		-	
2041062	German - Bachelor Exam / FME	Z,ZK	2	
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ies, to take part in c	discussions,	
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.			
2041063	French - Bachelor Exam /FME	Z,ZK	2	
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	· · ·	discussions,	
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	<i>,</i> ,	,	
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 difficult	, , ,		
		les, lo lake part in c		
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.			
2041065	Russian - Bachelor Exam / FME	Z,ZK	2	
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ies, to take part in c	discussions,	
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.			
2046068	English - Beginners	Z	2	
Aim: Basic voca	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology [orofessional langua	ige). A1	
2046069	English - Beginners	7	2	
	imon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding			
wapped to the Com		and use of basic e	expressions	
	of general scientific terminology (professional language).		-	
2046070	English - Lower Intermediate	Z	2	
Aim: Understanding	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. A1 - A2.			
2046071	English - Lower Intermediate	Z	2	
Mapped to the Con	nmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a s	student meets eithe	er at school	
or at his/her free	time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improveme	nt of professional l;	anguage.	
2046072	English - Upper Intermediate	7	2	
	language skills taking into consideration professional English and common professional terminology. Comprehension of standard En			
	about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 -		onvoroduon	
2046072				
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			
terminology. Compr	ehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedia	ate level. Broadenir	ng grammar	
	knowledge.	·		
2046074	English - Advanced	Z	2	
The aim: compreh	nension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writter	n and oral skills on	advanced	
level. Ability to writ	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 a	difficulties.	
	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 English			
	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay reading and compreher			
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.			
2046076		Z	2	
	German - Beginners	I I		
Basic vocabulary of	f everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession	ai language) It corr	responds to	
	the Common European Framework of Reference for Languages A1.	T		
2046077	German - Beginners	Z	2	
Mapped to the leve	el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an	d use of basic expr	ressions of	
	general scientific terminology (professional language).			
2046078	German - Lower Intermediate Course	Z	2	
	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 wav	
	about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	5	,	
2046079	German - Lower Intermediate Course	Z	2	
		I I		
	l of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a			
	time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement	_		
2046080	German - Upper Intermediate Course		2	
		Z	1	
Understanding sta	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	- 1	ences and	
Understanding sta		- 1	ences and	
2046081	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	- 1	ences and 2	
2046081	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	2	
2046081 Mapped to the leve	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. German - Upper Intermediate Course	to describe experie Z les across at work,	2 at school,	
2046081 Mapped to the leve during free time, an	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. German - Upper Intermediate Course el of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com id talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding	to describe experie Z nes across at work, ng general and tect	2 at school, hnical texts.	
2046081 Mapped to the leve during free time, an 2046082	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. German - Upper Intermediate Course el of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com id talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course	to describe experie Z nes across at work, ng general and tect Z	2 at school, hnical texts. 2	
2046081 Mapped to the leve during free time, an 2046082 Comprehension c	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. German - Upper Intermediate Course el of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com id talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding	to describe experies Z hes across at work, ng general and tect Z n in discussions. Ex	2 at school, hnical texts. 2 xpressing	

and active participa 2046084 Understanding clear 2046085 Mapped to the leve his/her free time 2046086 Understanding clear 2046087 Mapped to the leve his/her free time 2046088 Understanding sta 2046089	German - Advanced Course of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in Ge ion in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehen scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. French - Beginners y 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. French - Beginners' Course of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which a a and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. French - Lower Intermediate Course y 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 French - Lower Intermediate Course y 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. French - Lower Intermediate Course of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a a and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. French - Lower Intermediate Course of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a a and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement a and speaking a	Insion of popular-so Z in a simple way at Z student meets at s of professional lar Z	cientific and 2 bout familian 2 cchool or in nguage. 2
and active participa 2046084 Understanding clear 2046085 Mapped to the leve his/her free time 2046086 Understanding clear 2046087 Mapped to the leve his/her free time 2046088 Understanding sta 2046089	ion in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehen- scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. French - Beginners y 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. French - Beginners´ Course of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which a and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement French - Lower Intermediate Course y 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. French - Lower Intermediate Course of common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing topics. Reading and comprehension of simple texts. Improvement of professional language. French - Lower Intermediate Course of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a	Insion of popular-so Z in a simple way at Student meets at s of professional lar Z in a simple way at	cientific and 2 bout familian 2 cchool or in nguage. 2
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Mapped to the leve his/her free time 2046088 Understanding sta 2046089	of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a	7	
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2046088 Understanding sta 2046089	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	student meets at s	chool or in
2046088 Understanding sta 2046089		of professional lar	iguage.
Understanding sta	French - Upper Intermediate	7	2
2046089	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe evneri	1
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	to describe experi	shoes and
		Z	0
Mapped to the leve	French - Upper Intermediate	_	2
	of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com		
-	talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandin	_	
2046090	French - Advanced	Z	2
Comprehension of	f spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation	in discussions. Ex	pressing
opinions. W	ritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a	and technical articl	es.
2046091	French - Advanced	Z	2
Mapped to the le	vel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	pics familiar to the	
Communication with	native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	nderstanding texts	concernin
	currant issues and popular scientific and technical articles.	-	
2046096	Spanish - Beginners	7	2
1	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	1
, and one of the standing	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	rrining in a cimple	may about
2046097		Z	2
	Spanish - Beginners		1
	nmon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s		
	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	-	
2046098	Spanish - Lower Intermediate	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	oout familia
	topics. Reading and comprehension of simple texts. Improvement of professional 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 studen	t meets at school	or in his/hei
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	ige.
2046117	Czech -Advanced	Z	2
	poken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in disc	cussions. Expressi	
-	skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to	-	.9
2046118	Czech -Advanced	7	2
	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec		1
	n in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	•	
active participatio		ion of popular-scie	nunc anu
	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
	ulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rotessional langua	-
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Com	non European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	and use of basic	expressions
	of general scientific terminology (professional language).		
2046125	Czech Lower Intermediate	Z	2
1	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.		.,
2046126		Z	2
1	Czech Lower Intermediate		1
Aim: Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		-
2046127	Czech - Upper Intermediate	Z	2
Understanding sta	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi-	ences and
,	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046128	Czech - Upper Intermediate	Z	2
Mapped to the Com	non European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	ech and common r	orofessiona
terminology. Com	rehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm	ediate level. Broad	lening the
	knowledge technical language.		
2046135	Russian - Beginners	Z	2
	ulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p		
2046136	Russian - Beginners	Z	2
20401.00	Ŭ	_	1
1	of Common Furghean Framework of Reference: A1 Racio vocabulary of overviday life in a application and written form Understanding	and use of Dasic e	vhig2210112
1	of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding of general scientific terminology (professional language)		

			,
2046137	Russian - Lower Intermediate Course y what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing		2
Sinderstanding clean	topics. Reading and comprehension of simple texts. Improvement of professional language.	g in a simple way a	Dout lamilia
2046138	Russian - Lower Intermediate Course	Z	2
Apped to the level	of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a studen	nt meets at school	or in his/he
free time and	d speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of p	professional langu	age.
2046139	Russian - Upper Intermediate	Z	2
Understanding star	dard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe exper	ences and
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046140	Russian - Upper Intermediate	Z	2
Mapped to the level	of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me	ets at work, at sch	iool, during
ree time, and talking	about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understandi	ng general and teo	chnical texts
2046141	Russian - Advanced	Z	2
Comprehension of	spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participatio	n in discussions. E	xpressing
	ritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a		
2046142	Russian - Advanced	7	2
	el of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to	. –	1
	native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u		
	currant issues and popular scientific and technical articles.		
2046155	English Conversation	Z	2
2040100	Improving communicative skills in speaking on general topics and general technical topics.	4	L 7
2046156	English Conversation	Z	2
2040150	Improving communicative skills in speaking on general topics and general technical topics.	L 7	2
2040404		7	
2046161	Presentations in English	Z	2
	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.	_	
2046162	Presentations in German	Z	2
	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.		
2046163	Presentations in French language	Z	2
	Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.		
2046164	Presentations in Russian	Z	2
	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.		
2046165	Presentations in Spanish	Z	2
	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.		1
2046166	Presentations in Czech	Z	2
	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departm	1	-
2131002	Engineering Design II	Z,ZK	4
	S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface	1 '	
-	s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	-	
2131026	Machine Elements and Mechanisms II	ZK	3
	esign calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism,	1	-
reinninary design, d	and fittings.	pipelines and their	accessorie
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
	ments (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, ke	1	1
	n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded		
	key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple asser	-	-
	seminar work.		aloporioabi
2133013	Engineering Design III.	Z	2
2100010	Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)	· -	2
0100014		7	
2133014	Engineering Design IV.	Z	2
2133025	Design	Z	4
Design	design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coupl	ings and clutches.	T
			4
2141504	Electric Circuits and Electronics	Z,ZK	
2141504	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of	energy. El. Power a	
2141504 Introduction into the		energy. El. Power a	
2141504 Introduction into the	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of	energy. El. Power a r, power control, o	
2141504 Introduction into the	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize	energy. El. Power a r, power control, o	
2141504 Introduction into the Introduction into e 2141505	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of lectronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro	r, power control, o cessor.	perational
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-	energy. El. Power a r, power control, o cessor. Z,ZK former, principle, c torque characteris	perational 4 onstructior stic, speed
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer	energy. El. Power a r, power control, o cessor. Z,ZK former, principle, c torque characteris	perational 4 onstructior stic, speed
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform ontrol. Synchronous	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transler, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-torque character Low-voltage distribution system.	energy. El. Power a r, power control, o cessor. Z,ZK former, principle, c -torque characteris ristic. Low-voltage	perational 4 onstructior stic, speed
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- trical machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque character	energy. El. Power a r, power control, o cessor. Z,ZK former, principle, c torque characteris	perational 4 onstruction tic, speed
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform control. Synchronous	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transler, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-torque character Low-voltage distribution system.	energy. El. Power a r, power control, o cessor. Z,ZK former, principle, c -torque characteris ristic. Low-voltage	erational 4 onstruction stic, speed instrument
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2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform control. Synchronous 2144062	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- to analogue distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia	chergy. El. Power a r, power control, o cessor. Z,ZK former, principle, c -torque characteris ristic. Low-voltage Z,ZK	perational 4 onstruction tic, speed instrument 3
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform sontrol. Synchronous 2144062 2146060	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- to analogue distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language Course for Exchange	cherergy. El. Power a r, power control, o ccessor. Z,ZK former, principle, c -torque characteris ristic. Low-voltage Z,ZK	perational 4 onstruction instruments 3 2
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform control. Synchronous 2144062	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transf er, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- to anachines. DC-machines, principle, parameters, operating conditions, construction, starting, speed-torque character Low-voltage distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language for Student Exchange Program to Indonesia Technical Indonesian - Course I.	chergy. El. Power a r, power control, o cessor. Z,ZK former, principle, c -torque characteris ristic. Low-voltage Z,ZK	perational 4 onstruction tic, speed instrument 3
2141504 Introduction into the Introduction into e 2141505 AC el. curcuits. Elec 3-phase transform sontrol. Synchronous 2144062 2146060 2146061	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transf er, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- tow-voltage distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language for Student Exchange Program to Indonesia Technical Indonesian - Course I. Second part of Indonesian Language for Student Exchange Program to Indonesia	r, power control, o ccessor. Z,ZK former, principle, c torque characteris ristic. Low-voltage Z,ZK Z	perational 4 onstruction instrument: 3 2 2
2141504 Introduction into the Introduction into the 1ntroduction into e 2141505 AC el. curcuits. Elec 3-phase transform control. Synchronous 2144062 2146060 2146061 2151158	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- tow-voltage distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language for Student Exchange Program to Indonesia Technical Indonesian - Course I. Second part of Indonesian Language for Student Exchange Program to Indonesia Principles of Refrigerating Technology and Heat Pumps	energy. El. Power a r, power control, o ccessor. Z,ZK former, principle, c torque characteris ristic. Low-voltage Z,ZK Z Z,ZK	perational 4 onstruction stic, speed instruments 3 2 2 5
2141504 Introduction into the Introduction into the 2141505 AC el. curcuits. Elec 3-phase transform control. Synchronous 2144062 2146060 2146061 2151158 2152091	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque character Low-voltage distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language for Student Exchange Program to Indonesia Technical Indonesian - Course I. Second part of Indonesian Language for Student Exchange Program to Indonesia Principles of Refrigerating Technology and Heat Pumps Deparmental Project	energy. El. Power a r, power control, o ccessor. Z,ZK former, principle, c torque characteris ristic. Low-voltage Z,ZK Z Z,ZK KZ	perational 4 onstruction stic, speed instruments 3 2 2 5 2 2
2141504 Introduction into the Introduction into the 2141505 AC el. curcuits. Elect 3-phase transform control. Synchronous 2144062 2146060 2146061 2151158	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro Electrical machines and drives trical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed- tow-voltage distribution system. Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language for Student Exchange Program to Indonesia Technical Indonesian - Course I. Second part of Indonesian Language for Student Exchange Program to Indonesia Principles of Refrigerating Technology and Heat Pumps	energy. El. Power a r, power control, o ccessor. Z,ZK former, principle, c torque characteris ristic. Low-voltage Z,ZK Z Z,ZK	perational 4 onstruction, stic, speed instruments 3 2 2 5

2161596	Fundamentals of Heating	Z,ZK	5
	Basic knowledge acquisition from the field of heating of residential and industrial buildings. Designing of convective and radiant heating		
2162023	Basics of alternative energy sources Principles and basics of alternative energy sources applications. Solar energy. Heat pumps. Biomass utilization.	KZ	4
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	f transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical		
	in continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and ther	0 , 1	
	systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2182019	Chemistry	KZ	3
	try from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties im, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher		
	oriented upon the material properties measurement.	nistry. Laboratory	practice is
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.		
2311101	Mechanics I.	Z,ZK	4
Mechanics I deals	s with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their sys	stems with and with	nout friction.
2311102	There are introduced the methods of description of position and motion of particles and rigid bodies. Mechanics II.	Z,ZK	4
	IVIECTIATICS II. Int and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, s	•	
	otion. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vect		
	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechan	nisms.	
2321039	Materials Science II.	Z,ZK	4
Fundamentals of	metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the		processing,
	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materi		-
2322029	Materials Science I.	KZ	3
	sent state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defor terials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, ir		
2362091	Project	KZ	2
2363091	Project Presentation	Z	4
2371047	Automatic Control	 Z,ZK	5
	Jlers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automati	•	-
like transfer functi	ons, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate	tes on logic control	and control
via programma	ble logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained.	Students begin to	work with
2372041	MATLAB software as a common platform of control engineers.	KZ	3
	Computer Support for Study uces students into creating technical and professional documents on computers or Web and into realizing technical computations with t		-
	cal skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating techni		
2372083	Measurement in Engineering	KZ	3
Overview of se	nsor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	verification of mea	surement
	instruments.		
2372091	Project An individual project from the branch of specialisation, which student will study on his/her magister level	KZ	2
2373091	Project presentation	Z	4
	bachelor work presentation. Student should study the presentation software possibilities and proposition of the department. Student sh		-
	on of his diploma or bachelor work and present it in the face of the other student. The presentation will continue with discussion. Conse		
	presented as a pdf file on a temporal web page.		
2381054	Management and Economics of the Enterprise	Z,ZK	4
-	ended to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonin		
	nships between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audience in organizations. every product or service is valued at a selling price and therefore it is necessary to understand the simple costing of		
	counter reports and should understand the basic structure of financial statements. As a future manager, he will compile and approve the		-
of management	they will learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project managerial	gement. For decisi	on-making
	purposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be	introduced.	
2383001	Fundamentals of Law	Z	2
	in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provid		-
	sources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is no ions, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.	-	
leads students to know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relationships and to make them ready			
to prepare professional presentations and to understand basic structures between law and engineering			
2383009	Communication and Dealing with People	Z	2
Human commun	ication represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (v	with specific modif	cations) to
K224000	the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.	7 71/	F
K331068 Foundry propertie	Technology I s of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form	Z,ZK ing processes. Sei	5 ni-products.
	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatmen		p. 000000,
K333038	Fundamentals of Technology I.	Z	3
	esses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technology		ction of pig
iron and steel C	asting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tech	nology. Hot and co	old foraina.

Free and drop forging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of welding. Fusion welding: Flame
welding and arc welding with coated electrodes. Thermal cutting.

K341014

0	
Technology II.	

Z,ZK

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For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-07-16, time 16:27.