Study plan

Name of study plan: 11 68 73 00 BTZI 2012 K základ

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Theoretical Fundamentals of Mechanical Engineering

Type of study: Bachelor combined

Required credits: 217 Elective courses credits: 0 Sum of credits in the plan: 217 Note on the plan: druhý pokus

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 207

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 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)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
2371047	Automatic Control Milan Hofreiter, R žena Petrová, Tomáš Vyhlídal, Jaromír Fišer Tomáš Vyhlídal Tomáš Vyhlídal (Gar.)	Z,ZK	5	3P+15C+05L	- *	Р
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna, Jan Sko ilas Radek Šulc Radek Šulc (Gar.)	KZ	3	2P+1C	1	Р
2131512	Machine Elements and Mechanisms I. Eliška Cézová, Zden k ešpíro, Martin Dub, Martin Havlí ek, Jan Hoidekr, Ji í Houkal, Jan Kanaval, František Lopot, Ji í Mrázek, František Lopot František Lopot (Gar.)	Z,ZK	6	3P+2C	*	Р
2131026	Machine Elements and Mechanisms II Eliška Cézová, Zden k ešpíro, Martin Dub, Ji í Houkal, Jan Kanaval, František Lopot, Karel Petr, Jan Flek František Lopot František Lopot (Gar.)	ZK	3	3P+0C	*	Р
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák Jaroslav Novák Jan Chyský (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2141505	Electrical machines and drives Jan Chyský, Jaroslav Novák, Lubomír Musálek, Michael Valášek Jaroslav Novák Jan Chyský (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2021041	Physics I.	Z,ZK	7	4P+1L	*	Р
2021025	Physics II.	Z,ZK	4	1P+2L	3	Р
2133025	Design František Lopot František Lopot (Gar.)	Z	4	0P+4C	*	Р
2011021	Constructive Geometry Ivana Linkeová	Z,ZK	6	3P+2C	*	Р
2381054	Management and Economics of the Enterprise Olga Heralová, Št pánka Uli ná, Vladimír Brdek, Petr Žemli ka Olga Heralová (Gar.)	Z,ZK	4	2P+2C	*	Р
2011056	Mathematics I Radka Keslerová, Marta Hlavová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Nikola Pajerová, Petr Louda, Lukáš Hájek, Radka Keslerová Gejza Dohnal (Gar.)	Z,ZK	8	4P+4C	*	Р
2011062	Matematika II. Radka Keslerová	Z,ZK	8	4P+4C	*	Р

2011009	Mathematics III Radka Keslerová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Tomáš Neustupa, Stanislav Kra mar Stanislav Kra mar (Gar.)	Z,ZK	5	2P+2C	*	Р
2311101	Mechanics I. Michael Valášek, Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Michael Valášek Michael Valášek (Gar.)	Z,ZK	4	2P+2C	*	Р
2311102	Mechanics II. Michael Valášek, Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Michael Valášek Václav Bauma (Gar.)	Z,ZK	4	2P+2C	*	Р
2121500	Fluid Dynamics	Z,ZK	5	3P+2C	*	Р
2322029	Materials Science I. Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Lucie Pilsová, Jana Sobotová Jana Sobotová (Gar.)	KZ	3	2P+1L	2	Р
2321039	Materials Science II. Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Jan Walter, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Stanislav Krum Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2011049	Numerical Mathematics Radka Keslerová, Ji í Holman, Marta ertíková, Vladimír Hric, Petr Louda, Lukáš Hájek, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Petr Svá ek Petr Svá ek (Gar.)	Z,ZK	4	2P+2C	4	Р
2012037	Computer Graphics Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka Ivana Linkeová	KZ	3	1P+1C	*	Р
2372041	Computer Support for Study Vladimír Hlavá	KZ	3	1P+1C	*	Р
2181026	Momentum, Mass and Heat Transfer Martin Dostál, Vojt ch B Iohlav, Stanislav Solna , Jan Sko ilas, Tomáš Jirout, Adam Krupica, Ji í Moravec Tomáš Jirout Tomáš Jirout (Gar.)	Z,ZK	5	3P+1C	*	Р
2132001	Engineering Design I. Karel Petr	KZ	2	1P+2C	1	Р
2131002	Engineering Design II Martin Dub, Martin Havlí ek, Jan Hoidekr, Jan Kanaval, Karel Petr, Marek Štádler, Jan Flek Karel Petr Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Р
2133013	Engineering Design III. Jan Hoidekr, Jan Kanaval, František Lopot, David Skalický, Roman Uhlí Jan Hoidekr Jan Hoidekr (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 Bohumír Bedná	Z,ZK	5	16B	*	Р
K341014	Technology II. Pavel Novák	Z,ZK	5	8KP+8KC	*	Р
2121023	Thermodynamics	Z,ZK	5	3P+2C	*	Р
2131005	History of Technology	ZK	3	2P+0C	1	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 Ond ej Bartoš, Tomáš Dlouhý, Václav Dostál, Zden k Funda, Miroslav Gleitz, Jan Havlík, Št pán Hrouda, Jitka Jeníková, Guk Chol Jun, Jan Havlík	Z	1	1P+1C	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р
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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

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General chemistry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties of matter, thermodynamics, phase equilibrium, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemistry. Laboratory practice is oriented upon the material properties measurement.

(belt, chain, friction, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded connecting bolts, clamped, pressed, splined and key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assembly units is also indispensable seminar work.

2131026 Machine Elements and Mechanisms II Preliminary design, design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechan	ZK ism, pipelines and t	3 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 introduction into electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabil		
amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprocessor.	zer, power control,	operational
2141505 Electrical machines and drives	Z,ZK	4
AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. T		
3-phase transformer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, spec control. Synchronous machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque cha	•	
Low-voltage distribution system.		
2021041 Physics I.	Z,ZK	7
Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elas waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Of the continuum		
insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and in		
measurements of 11 various experiments related to the lectures.	7.71	
2021025 Physics II. Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	Z,ZK	4
of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom	-	
Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6	experiments related	d to the lectures.
2133025 Design	Z	4
Design, design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft couplings an		6
2011021 Constructive Geometry The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.	Z,ZK	6
2381054 Management and Economics of the Enterprise	Z,ZK	4
The course is designed to give students the understanding of economic principles. The economical part of the course is consisted from: explanation	•	
revenues, expenses and income, concept of investment and calculations per product, presentation how to assemble a basic operating budget and		
of the financial statements. The management introduces the basic managerial functions and their contents, the uses of network analysis in project of multi-criteria decision, the basics of marketing and strategic management.	management, with	tne application
2011056 Mathematics I	Z,ZK	8
In the course, greater emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connections.		ncepts. Students
will also get to know the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic are	eas: eigennumbers a	and eigenvectors
of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions. 2011062 Matematika II.	Z,ZK	8
2011062 Matematika II. Open and closed set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Diffe	1 '	-
and curl (rotation). Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral.	•	
of integrals to polar, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and 0		
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 values-Ostrogradskij theorem.	ector field through a	a surface. The
2011009 Mathematics III	Z,ZK	5
An introductory course in ordinary differential equation and infinite series.	, ,	
2311101 Mechanics I.	Z,ZK	4
Mechanics I deals with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and the There are introduced the methods of description of position and motion of particles and rigid bodies.	eir systems with and	d without friction.
2311102 Mechanics II.	Z,ZK	4
Kinematics of point and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar mot	1 '	
general spatial motion. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric an	d vector method. Gr	aphical methods
in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms.	7.71/	
2121500 Fluid Dynamics The basic course in fluid dynamics deals with fundamental laws of hydrostatics and hydrodynamics and their application on the basic problems, as	Z,ZK	5 stimation of
pressure losses, simplified solution of unsteady flow. Basic information on more complicated problems (laminar and turbulent flow, boundary layer		
introduced as well.		
2322029 Materials Science I.	KZ	3
History and present state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, d fracture of materials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations,		
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	1 '	·
technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.		
2011049 Numerical Mathematics		
Numerical solution of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Num equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.	Z,ZK	4
2012037 Computer Graphics		
	erical solution of ord	dinary differential
2012037 Computer Graphics 2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations	KZ KZ with the use of com	dinary differential 3 3 puters. Students
2012037 Computer Graphics 2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical computations.	KZ KZ with the use of comal-based WWW pag	dinary differential 3 3 puters. Students ge.
2012037 Computer Graphics 2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical calcula	KZ KZ With the use of comal-based WWW pag	3 3 puters. Students ge.
2012037 Computer Graphics 2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical computations.	KZ KZ with the use of com al-based WWW pag Z,ZK incal energy equation	3 3 puters. Students ge. 5 on. Residence
2012037 Computer Graphics 2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical calcu	KZ KZ with the use of com al-based WWW pag Z,ZK nical energy equation d thermal radiation.	3 3 puters. Students ge. 5 on. Residence Multicomponent
2012037 Computer Graphics 2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical computations with a spreadsheet calculator, and by creating technical compu	KZ KZ with the use of com al-based WWW pag Z,ZK incal energy equation	3 3 puters. Students ge. 5 on. Residence

2131002 Engineering Design II Principles of ISO GPS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerand	l Z.ZK	4
	1 '	
dimensional loops, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and project where students apply a	-	
2133013 Engineering Design III.	Z	2
Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)		2
2133014 Engineering Design IV.	Z	2
2372083 Measurement in Engineering	KZ	3
Overview of sensor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibrium of the control of the cont		_
instruments.	ation and verification of the	easurement
K331068 Technology I	Z.ZK	5
Foundry properties of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Di	1 '	1
heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatment.	violeti et terriing preceded	s. Com producto
K341014 Technology II.	Z,ZK	5
2121023 Thermodynamics	Z,ZK	5
The course deal with a basic engineering approach to classical thermodynamics, heat transfer and compressible flow through nozzles and	1 '	1
introduced, and they are applied mostly to systems behaving as ideal gases or typical vapours. Basic notions associated with ideal mixtures are	•	
	•	
Heat transfer covers fundamentals of conduction, convection and radiation. Heat exchangers are treated as an engineering application. Exe	rcises and labs are devote	ed to practical
problems and experimental technique.		•
1 22 7 2 2 2 3 3	ZK	3
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er	nphasis is given upon new	3 branches of
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine industrial contribution.	nphasis is given upon new ry in the narrower sense o	3 branches of
1 2 3 7 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	nphasis is given upon new	3 branches of
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine industrial metallurgy.	nphasis is given upon new ry in the narrower sense o	3 branches of f the word.
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals	nphasis is given upon new ry in the narrower sense o	3 branches of f the word. 4 d operations.
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expressions.	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear e	3 branches of f the word. 4 d operations. quations. Scripts
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and express Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix oper	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear e rointers. Structures. Algorit	3 branches of f the word. 4 d operations. quations. Scripts
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Er technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and express Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix oper and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Fisimple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for sections.	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear e rointers. Structures. Algorit	3 branches of f the word. 4 d operations. quations. Scripts hmization of
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Entechnology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and exprese Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operand functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Find in programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for second 2153005 Fundamentals of Energy Conversions	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear e conters. Structures. Algorit colution of systems of linear	3 branches of f the word. 4 d operations. quations. Scripts hmization of
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Entechnology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and exprese Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix oper and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Find simple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for second sec	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear etointers. Structures. Algorit blution of systems of linear Z Z	3 branches of f the word. 4 d operations. quations. Scripts hmization of equations. 1 2
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Entechnology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and express Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix oper and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Find simple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for second s	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear etointers. Structures. Algorit blution of systems of linear Z Z etis to provide a view into the	3 branches of f the word. 4 d operations. quations. Scripts hmization of equations. 1 2 he Czech Legal
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Entechnology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and exprese Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix oper and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Find simple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for second seco	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear e rolution of systems of linear EZ Z e is to provide a view into tations. It is necessary for s	3 branches of f the word. 4 d operations. quations. Scripts hmization of equations. 1 2 he Czech Legal tudents to know
Developement of human knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Entechnology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine indust 2012035 Algorithmization and Programming Fundamentals Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and exprese Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix oper and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Find simple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for section 153005 Fundamentals of Energy Conversions 2383001 Fundamentals of Law Basic orientation in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course Order, particular sources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regular.	nphasis is given upon new ry in the narrower sense of KZ ssion. Matrices, vectors an ations. Systems of linear etointers. Structures. Algorit blution of systems of linear Z Z e is to provide a view into tations. It is necessary for sion of laws. At the same tire	3 branches of f the word. 4 d operations. quations. Scripts hmization of equations. 1 2 he Czech Legal tudents to know me the course

Code of the group: 12BT**P-ALFA

Name of the group: 02 2012 ALFA povinné pro TZI

Requirement credits in the group: In this group you have to gain 38 credits

Requirement courses in the group: In this group you have to complete 14 courses

Credits in the group: 38

Note on the	<u> </u>				1 1	
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
202A041	Physics I.	ZK	3	0P+0L	*	Р
202A025	Physics II.A	ZK	2	0P+0C	*	Р
201A021	Constructive Geometry A Ivana Linkeová	ZK	3	0P+0C	*	Р
201A056	Mathematics I.A Radka Keslerová	ZK	4	0P+0C	*	Р
201A062	Mathematics II.A Radka Keslerová	ZK	4	0P+0C	*	Р
201A009	Mathematics III.A Stanislav Kra mar	ZK	2	0P+0C	*	Р
231A101	Mechanics I.A Michael Valášek	ZK	2	0P+0C	*	Р
231A102	Mechanics II.A Michael Valášek	ZK	2	0P+0C	*	Р
231A107	Mechanics III.A Michael Valášek, Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Michael Valášek Michael Valášek (Gar.)	ZK	4	0P+0C	*	Р
212A500	Fluid Dynamics A	ZK	3	0P+0C	*	Р
201A049	Numerical Mathematics A Lud k Beneš	ZK	2	0P+0C	*	Р
212A023	Thermodynamics A	ZK	2	0P+0C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BT**P-ALFA Name=02 2012 ALFA povinné pro TZI

202A041 Physics I.

Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic properties of bodies. Oscillations, waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors, insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression, measurements of 11 various experiments related to the lectures.

202A025 Physics II.A

Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves. Interaction of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements. Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures.

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201A021	Constructive Geometry A	ZK	3			
The subject is focused						
201A056	Mathematics I.A	ZK	4			
Introduction to linear al	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. Differential operators div (divergence) and curl (rotation). Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, Fubini theorem. 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.

20	1A009	Mathematics III.A	ZK	2
23	1A101	Mechanics I.A	ZK	2
23	1A102	Mechanics II.A	ZK	2
23	1A107	Mechanics III.A	ZK	4
21	2A500	Fluid Dynamics A	ZK	3

The basic course in fluid dynamics deals with fundamental laws of hydrostatics and hydrodynamics and their application on the basic problems, as 1D flow in ducts, estimation of pressure losses, simplified solution of unsteady flow. Basic information on more complicated problems (laminar and turbulent flow, boundary layer theory, flow sepparatrion) are introduced as well.

201A049	Numerical Mathematics A	ZK	2
212A023	Thermodynamics A	ZK	2

The course deal with a basic engineering approach to classical thermodynamics, heat transfer and compressible flow through nozzles and diffusers. Basic concepts and principles are introduced, and they are applied mostly to systems behaving as ideal gases or typical vapours. Basic notions associated with ideal mixtures are studied with an emphasis on psychometrics. Heat transfer covers fundamentals of conduction, convection and radiation. Heat exchangers are treated as an engineering application. Exercises and labs are devoted to practical problems and experimental technique

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

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

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:

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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	*	P	

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. Z 3

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

Code of the group: 12BT*5P-ME3

Name of the group: 09 2012 ME3 pro TZI

Requirement credits in the group: In this group you have to gain 7 credits

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

Credits in the group: 7

Note on the group.

Tioto on the gro	3P.					
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
2311107	Mechanics III. Michael Valášek, Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Michael Valášek Michael Valášek (Gar.)		7	2P+3C	5	Р

Characteristics of the courses of this group of Study Plan: Code=12BT*5P-ME3 Name=09 2012 ME3 pro TZI

2311107 | Mechanics III. | Z,ZK | 7

Mechanics III deals with the basic concepts of dynamics. Methods of solving the dynamics of mass particle and body motion and their systems are described. Methods for describing and solving vibrations of systems.

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
2383019	Philosophical Issues Of Individual and Science	Z	2	1P+1C	*	PV
2383009	Communication and Dealing with People Jan Horejc Jan Horejc (Gar.)	Z	2	1P+1C	*	PV
2383008	Managerial Psychology	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

2383019	Philosophical Issues Of Individual and Science	Z	2				
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.							
2383008	Managerial Psychology	Z	2				

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

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

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

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

Credits in the group: 2

Note on the group:

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

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2041061	English-Bachelor Exam Michele Le Blanc, Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Nina Procházková Ayyub	Z,ZK	2	0P+2C	*	PV
2041063	French - Bachelor Exam /FME Michaela Schusová, Dušana Jirovská Eliška Vítková Eliška Vítková (Gar.)	Z,ZK	2	0P+2C	*	PV
2041062	German - Bachelor Exam / FME Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Jaroslava Kommová	Z,ZK	2	0P+2C	*	PV
2041065	Russian - Bachelor Exam / FME Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská Eliška Vítková	Z,ZK	2	0P+2C	*	PV
2041064	Spanish - Bachelor Exam / FME Eliška Vítková, Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková	Z,ZK	2	0P+2C	*	PV

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

2041061 English-Bachelor Exam Z,ZK 2

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

Code of the group: 12BT*6Q-OP

Name of the group: 10 2012 BTZI 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:

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
2012091	Project Ji i Fürst	KZ	2	0P+2C	*	PV
2112091	Project	KZ	2	0P+2C	*	PV
2122091	Department Project	KZ	2	0P+2C	*	PV
2132091	Branch Project Roman Uhli	KZ	2	0P+2C	*	PV
2152091	Deparmental Project	KZ	2	0P+2C	*	PV
2162091	Project	KZ	2	0P+2C	*	PV
2182091	Project Tomáš Jirout	KZ	2	0P+2C	*	PV
2222091	Project	KZ	2	0P+2C	*	PV
2312091	Project Michael Valášek	KZ	2	0+2	*	PV
2322091	Project Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Jakub Horváth, Stanislav Krum	KZ	2	0P+2C	*	PV
2332091	Project Bohumír Bedná, Barbora Bryksí Stunová, Jan ermák, Jaroslav ervený, Tomáš Gur ík, Aleš Herman, Ladislav Kola ík, Marie Kola íková, Viktor Kreibich, Ladislav Kola ík Aleš Herman (Gar.)	KZ	2	0P+2C	*	PV
2342091	Project Vladislav Andronov, Libor Beránek, František Holešovský, Tomáš Kellner, Michal Koptiš, Ji í Kyncl, Martin Kyncl, Jan Mádl, Petr Mikeš, Pavel Novák	KZ	2	0P+2C	*	PV
2352091	Specialization Project	KZ	2	2C	*	PV
2362091	Project	KZ	2	0P+2C	*	PV
2372091	Project	KZ	2	0P+2C	*	PV
2382091	Specialization Project Vladimír Brdek, Ladislav Vaniš, Barbora Stieberová	KZ	2	0P+2C	*	PV

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

2012091	Project	KZ	2
2112091	Project	KZ	2
2122091	Department Project	KZ	2
The content of the sub	ject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the department.	•	
2132091	Branch Project	KZ	2
2152091	Deparmental Project	KZ	2
2162091	Project	KZ	2
Student will be informed	ed about basics of environmental engineering and creation of thermal comfort.		
2182091	Project	KZ	2
Absolvent se seznámí	se základy oboru Procesní technika.		
2222091	Project	KZ	2
2312091	Project	KZ	2
Individual asignment		,	

2322091	Project	KZ	2
On the basis of th	ne preliminary submission of a bachelor thesis the students, under supervision of their supervision	ors, prepare a review summarizing and evaluating the	studied literature
with particular em	nphasis on experimental technologies which can be applied in their bachelor theses. They can	also mention a planned experiment or evaluate hithe	rto obtained
knowledge or resi	sults.		
2332091	Project	KZ	2
2342091	Project	KZ	2
Work on specializ	zed tasks.	•	
2352091	Specialization Project	KZ	2
2362091	Project	KZ	2
2372091	Project	KZ	2
An individual proje	ject from the branch of specialisation, which student will study on his/her magister level	<u> </u>	•
2382091	Specialization Project	KZ	2

Code of the group: 12BT*6Q-BP

Name of the group: 11 2012 BTZI 6. sem bakalá ské práce

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:

poznámka 12BT*6Q-BP 2012 BTZI 6. sem bakalářské práce

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
2123991	Bachelor Thesis	Z	4	0P+0C	*	PV
2133991	Bachelor Thesis Roman Uhlí	Z	4	0P+0C	*	PV
2163991	Bachelor Thesis	Z	4	0P+0C	*	PV
2373991	Bachelor Thesis	Z	4	0P+0C	*	PV
2313991	Bachelor Thesis Michael Valášek	Z	4	0+0	*	PV
2113991	Bachelor Thesis	Z	4	0P+0C	*	PV
2363991	Bachelor Thesis	Z	4	0P+0C	*	PV
2153991	Bachelor Thesis	Z	4	0P+0C	*	PV
2223991	Bachelor Thesis	Z	4	0P+0C	*	PV
2323991	Bachelor thesis	Z	4	0P+6C	*	PV
2183991	Bachelor Thesis Tomáš Jirout	Z	4	0P+0C	*	PV
2383991	Bachelor Thesis	Z	4	0P+0C	*	PV
2333991	Bachelor Thesis Jan Kudlá ek	Z	4	0P+0C	*	PV
2013991	Bachelor Thesis	Z	4	0P+0C	*	PV
2353991	Bachelor Thesis	Z	4		*	PV

Characteristics of the courses of this group of Study Plan: Code=12BT*6Q-BP Name=11 2012 BTZI 6. sem bakalá ské práce

2123991	Bachelor Thesis	Z	4
2133991	Bachelor Thesis	Z	4
2163991	Bachelor Thesis	Z	4
Bachelor Thesis is	s final individual work. This work checks ability of logical independent technical thinking and treatment with t	echnical materials. There is applied acqu	ired knowledge
from previous stud	dy periods.		
2373991	Bachelor Thesis	Z	4
Each student will s	solve his individual theme under guiding of his individual supervising department specialist. Result is his/he	r bachelor thesis.	
2313991	Bachelor Thesis	Z	4
Individual assignm	nent		
2113991	Bachelor Thesis	Z	4
2363991	Bachelor Thesis	Z	4
2153991	Bachelor Thesis	Z	4
2223991	Bachelor Thesis	Z	4
2323991	Bachelor thesis	Z	4
Development of th	ne bachelor thesis on an assignment under the supervision.		•
2183991	Bachelor Thesis	Z	4
2383991	Bachelor Thesis	Z	4
Work on specialize	ed tasks related to the focus of a thesis.		•
2333991	Bachelor Thesis	Z	4
2013991	Bachelor Thesis	Z	4

2353991 Bachelor Thesis Z 4

The course focuses on processing the final thesis within the scope of the assigned topic of the bachelor thesis. The student is acquainted with the general principles of the final thesis and during regular weekly consultations with the supervisor proceeds in the professional solution of the assigned problem and at the same time works on the actual text of the final thesis. In the course of the solution, the student completes a small oral presentation where the work in progress is presented.

Name of the block: Elective courses Minimal number of credits of the block: 0

The role of the block: V

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, Olga Majlingová Radka Keslerová	Z	2	0P+2C	1	V

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

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

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

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

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

Credits in the group: 0

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 Michele Le Blanc, Eliška Vítková, Ilona Šimice, Nina Procházková Ayyub Nina Procházková Ayyub Michele Le Blanc (Gar.)	Z	2	0P+2C	*	V
2046156	English Conversation Michele Le Blanc, Eliška Vítková, Ilona Šimice, Nina Procházková Ayyub Nina Procházková Ayyub	Z	2	0P+2C	L	V
2046071	English - Lower Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	L	V
2046070	English - Lower Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046074	English - Advanced Michele Le Blanc, Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Michele Le Blanc, Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046072	English - Upper Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046073	English - Upper Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V

	English - Beginners					
2046068	Eliška Vítková, Michaela Schusová, Ilona Šimice, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046069	English - Beginners Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, 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 - Alexanded 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.	Z	2	0P+2C	Z	V
2046120	Jaroslava Kommová Czech Language for Beginners II.	Z	2	0P+2C	L	V
2046086	Jaroslava Kommová French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela	Z	2	0P+2C	Z	V
2046087	Schusová (Gar.) French - Lower Intermediate Course	Z	2	0P+2C	L	V
2046091	Michaela Schusová, Dušana Jirovská Dušana Jirovská French - Advanced	 Z	2	0P+2C	L	V
	Michaela Schusová, Dušana Jirovská Dušana Jirovská French - Advanced					
2046090	Eliška Vítková, Michaela Schusová, Dušana Jirovská Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046088	French - Upper Intermediate Eliška Vítková, 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 Michaela Schusová (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 Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046079	German - Lower Intermediate Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Eliška Vítková	Z	2	0P+2C	L	V
2046083	German - Advanced Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Jaroslava Kommová	Z	2	0P+2C	L	V
2046082	German - Advanced Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046081	German - Upper Intermediate Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Eliška Vítková	Z	2	0P+2C	L	V
2046080	German - Upper Intermediate Course Eliška Vitková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	٧
2046076	German - Beginners Eliška Vitková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	٧
2046077	German - Beginners Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Eliška Vítková	Z	2	0P+2C	L	٧
2046161	Presentations in English Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	*	٧
2046166	Presentations in Czech Eliška Vítková, Jaroslava Kommová, Petr Laurich Jaroslava Kommová Petr Laurich (Gar.)	Z	2	0P+2C	*	V

2046162	Presentations in German Eliška Vítková, Jaroslava Kommová, Petr Laurich Jaroslava Kommová Eliška Vítková (Gar.)	Z	2	0P+2C	*	V
2046164	Presentations in Russian Eliška Vítková, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	*	V
2046163	Presentations in French language Eliška Vítková, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	*	V
2046165	Presentations in Spanish Eliška Vítková Eliška Vítková	Z	2	0P+2C	*	V
2046137	Russian - Lower Intermediate Course Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská 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 Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská 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 Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská 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 Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046099	Spanish - Lower Intermediate Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková	Z	2	0P+2C	L	V
2046098	Spanish - Lower Intermediate Eliška Vítková, Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046096	Spanish - Beginners Eliška Vítková, Michaela Schusová, 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	Z	2	0P+2C	L	V

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

Kurzy a prezentac	oc .		
2046155	English Conversation	Z	2
Improving communicati	ve skills in speaking on general topics and general technical topics.		
2046156	English Conversation	Z	2
Improving communicati	ve skills in speaking on general topics and general technical topics.		
2046071	English - Lower Intermediate	Z	2
Mapped to the Commo	n European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which	a student meets	either at school
or at his/her free time a	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvem	ent of professiona	al language.
2046070	English - 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 sir	nple way about
familiar topics. Reading	and comprehension of simple texts. Improvement of professional language. A1 - A2.		
2046074	English - Advanced	Z	2
· ·	on of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writ		
	ummary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's fie	ld of studies without	out difficulties.
Grammar structures on	advanced level. B1 - B2.		
2046075	English - Advanced	Z	2
1 ''	n European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in E		
	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and comprel	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
	iguage skills taking into consideration professional English and common professional terminology. Comprehension of standarc	l English speech a	and conversation
<u> </u>	y life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1.		
2046073	English - Upper Intermediate	Z	2
	n European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional En	-	-
	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.			
2046068	English - Beginners	Z	2
	of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p		
2046069	English - Beginners	Z	2
	n European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	ding and use of b	asic expressions
	minology (professional language).		
2046126	Czech 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	m. Writing in a sir	nple way about
tamiliar topics. Reading	and comprehension of simple texts. Improvement of professional language.		

2046125	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 sir	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		
	discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehen	_	
	s from student's field of studies without difficulties. Grammar structures on advanced level.	olori oi popular oi	Mortano aria
		7	2
2046117	Czech -Advanced	Z	. 2
	en language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	· · · · · · · · · · · · · · · · · · ·	essing opinions.
	write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical at		
2046127	Czech - Upper Intermediate	Z	2
Understanding standard	d 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
	n European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional	_	
	nsion of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter		
knowledge technical lar			adormig are
2046119		Z	2
	Czech Language for Beginners I.	_	2
	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes		
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Commor	n European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	ding and use of b	asic expressions
of general scientific terr	ninology (professional language).		
2046086	French - Lower Intermediate Course	Z	2
	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	_	
,	mprehension of simple texts. Improvement of professional language.	iting in a cimple vi	ay about larrillar
		7	^
2046087	French - Lower Intermediate Course	Z	2
	Common European Framework of Reference: A2 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 lar	iguage.
2046091	French - Advanced	Z	2
Mapped to the level of (Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	ı pics familiar to the	student.
	tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading an		
	ular scientific and technical articles.	g	g
		7	2
2046090	French - Advanced	_	_
	ken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participatio		=xpressing
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.	
2046089	French - Upper Intermediate	Z	2
Mapped to the level of 0	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students of	omes across at w	ork, at school,
during free time, and ta	lking about these topics. Ability to describe experiences and events, explain one´s opinions and plans. Reading and understa	inding general an	d technical texts.
2046088	French - Upper Intermediate	Z	2
	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	_	
_	ne's opinions and plans. Reading and understanding general and technical texts.	ty to describe exp	cricilees and
2046084	French - Beginners	Z	2
Understanding clearly v	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	iting in a simple w	ay about familiar
topics. Reading and cor	nprehension of simple texts. Improvement of professional language.		
2046085	French - Beginners' Course	Z	2
Mapped to the level of 0	Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which	a student meets	at school or in
	leaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2146060			
	Indonesian Language Course for Exchange	Z	2
	nguage for Student Exchange Program to Indonesia		
2146061	Technical Indonesian - Course I.	Z	2
Second part of Indones	ian Language for Student Exchange Program to Indonesia		
2144062	Technical Indonesian - Course II.	Z,ZK	3
Basic of Indonesian Lar	nguage for Student Exchange Program to Indonesia	,	
2046078	German - Lower Intermediate Course	7	2
		_	
_	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	iii. wiilling iii a sii	ripie way about
	and comprehension of simple texts. Improvement of professional language.		
2046079	German - Lower Intermediate Course	Z	2
Mapped to the level of 0	Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic	h a student meets	either at school
or in his/her free time a	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	nt of professional	language.
2046083	German - Advanced Course	Z	2
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in	_	_
	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compre		_
	s from student's field of studies without difficulties. Grammar structures on advanced level.		55.5111115 4114
		7	^
2046082	German - Advanced Course	Z	2
	een language as well as lectures in German on topics familiar to the student. Communication with native speakers, participati		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 of	omes across at w	ork, at school,
	lking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa		
		Z	
2046080	German - Upper Intermediate Course	_	2
_	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ıy ıo describe exp	enences and
events, prietty explain o	ne's opinions and plans. Reading and understanding general and technical texts.		

	German - Beginners	Z	2
Basic vocabulary of	everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profe	ssional language)	
2046077	German - Beginners	Z	2
Mapped to the level	Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding	g and use of basic e	expressions of
general scientific ter	ninology (professional language).		
2046161	Presentations in English	Z	2
Preparing students t	p present in English on technical topics, with a possible co-operation with specialized departments.		
2046166	Presentations in Czech	Z	2
Preparing students t	o give presentations in English on technical topics, with a possible co-operation with specialized departments.	1	
2046162	Presentations in German	Z	2
	enting technical topics in German, possibly in cooperation with specialized departments.	_	_
2046164	Presentations in Russian	Z	2
	enting technical topics in Russian, possibly in cooperation with specialized departments.		_
2046163	Presentations in French language	Z	2
	riting technical topics in French, possibly in cooperation with specialized departments.		2
		Z	
2046165	Presentations in Spanish	4	2
	enting technical topics in Spanish, possibly in cooperation with specialized departments.		
2046137	Russian - Lower Intermediate Course	Z	2
-	y what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. W	riting in a simple wa	ay about familia
<u> </u>	comprehension of simple texts. Improvement of professional language.		
2046138	Russian - Lower Intermediate Course	Z	2
• •	of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a st		ool or in his/h
	ng about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of profe		
2046141	Russian - Advanced	Z	2
•	ooken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participa		Expressing
opinions. Written ski	s. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t	echnical articles.	
2046142	Russian - Advanced	Z	2
Mapped to the level	of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on	topics familiar to th	e student.
Communication with	native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a	and understanding t	exts concerning
currant issues and p	opular scientific and technical articles.		
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	meets at work, at s	chool, during
free time, and talking	about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understance	anding general and	technical text
2046139	Russian - Upper Intermediate	7	
		Z	2
Understanding stand	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abi	. – .	
-	1	. – .	
events, briefly explai	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts.	. – .	
events, briefly explai	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners	ility to describe exp	eriences and
events, briefly explai 2046136 Mapped to the level	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understand	ility to describe exp	eriences and
events, briefly explaint 2046136 Mapped to the level of general scientific to	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language)	llity to describe exp	eriences and 2 ic expressions
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language) Russian - Beginners	Z Z Z	eriences and
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Russian - Reginners Russian - Russ	Ility to describe explicitly to describe explicitly to describe explicitly to describe explicitly and use of bases and use of bases are also assigned as a second control of the control o	2 ic expressions
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Russian - Beginners Russian -	Z ding and use of bas Z ssional language)	2 ic expressions
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Russian - Beginners Russian - Beginners Russian - Beginners Russian - Beginners Russian - Beginners Russian - Beginners Russian - Beginners Spanish - Lower Intermediate Spanish - Lower Intermediate Spanish - Spanis	Z ding and use of bas Z ssional language) Z udent meets at sch	2 ic expressions
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level free time and speaking	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Russian - Beginners Russian -	Z ding and use of bas Z ssional language) Z udent meets at schessional language.	2 ic expressions 2 2 ool or in his/he
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level iree time and speaking 2046098	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language) Russian - Beginners Russian - Beginners Russian - Beginners Spanish - Lower Intermediate Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a string about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professionals Spanish - Lower Intermediate	Z ding and use of bas Z ssional language) Z udent meets at schessional language. Z	2 ic expressions 2 2 ool or in his/he
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level free time and speaking 2046098 Understanding clear	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language) Russian - Beginners Russian - Beginners Russian - Beginners Spanish - Lower Intermediate Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a string about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professions of spanish - Lower Intermediate Spani	Z ding and use of bas Z ssional language) Z udent meets at schessional language. Z	2 ic expressions 2 cool or in his/he
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level free time and speaking 2046098 Understanding clear topics. Reading and	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language) Russian - Beginners Russian - Beginners Everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional Lower Intermediate of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a string about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Z ding and use of bas Z ssional language) Z udent meets at schessional language. Z riting in a simple wa	2 ic expressions 2 2 ool or in his/he 2 ay about famili
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level free time and speaking 2046098 Understanding clear topics. Reading and 2046096	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language) Russian - Beginners Russian - Beginners Russian - Beginners Russian - Lower Intermediate Spanish - Beginners Spanish - Beginners	Z ding and use of bas Z ssional language) Z udent meets at schessional language. Z riting in a simple wa	2 ic expressions 2 2 ool or in his/he 2 ay about famili
events, briefly explain 2046136 Mapped to the level of general scientific to 2046135 Basic vocabulary of 2046099 Mapped to the level free time and speaking 2046098 Understanding clear topics. Reading and 2046096 Aim: Understanding of 2046096	and speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abin one's opinions and plans. Reading and understanding general and technical texts. Russian - Beginners Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanderminology (professional language) Russian - Beginners Russian - Beginners Russian - Lower Intermediate Common European Framework of Reference A2 Understanding and use of basic expressions of general scientific terminology (professional basic expressions) Spanish - Lower Intermediate Spanish - Beginners	Z ding and use of bas Z ssional language) Z udent meets at schessional language. Z riting in a simple wa	2 ic expressions 2 2 ool or in his/he 2 ay about famili
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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 ordinary 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
	ter emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connections	<i>'</i>	-
will also get to know	the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: ei	gennumbers and e	igenvectors
	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. Differenti	al operators div (d	vergence)
	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, f		
	r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green	•	
field, independent	ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vecto	r field through a su	ırface. The
0040005	Gauss-Ostrogradskij theorem.	1/7	4
2012035	Algorithmization and Programming Fundamentals	KZ	.4
	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matri Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. System		
- '	ructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. Str	•	
	s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of s	•	II.
2012037	Computer Graphics	KZ	3
2012091	Project	KZ	2
2013991	Bachelor Thesis	Z	4
		Z	
2016007	Mathematics I Seminar		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 relatio		
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
•	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differenti		
,	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, for a solution of more variables. Double integral, volume (=triple) integral, for a solution of the strength of the solution of the strength of		
	r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vecto	· ·	II.
ileia, iliaeperiaeria	Gauss-Ostrogradskij theorem.	i ileiu tillougii a sc	illace. The
2021025	Physics II.	Z,ZK	4
	rry slos in. ectromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of elec	, ,	- 1
-	natter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	-	II.
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 exper	· ·	
2021041	Physics I.	Z,ZK	7
Kinematics and dyr	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,
waves. Fluid me	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Con	nductors, semicon	ductors,
insulators. Magnet	ic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect	ct measurements,	regression,
	measurements of 11 various experiments related to the lectures.		
2026016	Physics - Seminar	Z	2
	The subject is mainly meant for high-school students for repetition of high-school physics.		
202A025	Physics II.A	ZK	2
-	ectromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of elec	_	
	natter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and		
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 exper		
202A041	Physics I.	ZK	3
	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. Coi		
	ic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirec		
ou.a.oror.mag.ro.	measurements of 11 various experiments related to the lectures.	or modean emeric,	.09.000.0,
2041061	English-Bachelor Exam	7 71/	2
	English Bashelet Exam	/ /K	
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	Z,ZK ies, to take part in o	
iviapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ies, to take part in o	discussions,
2041062		ies, to take part in d	discussions,
2041062	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME	ies, to take part in d	discussions,
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2041062 Mapped to the Com 2041063	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME Imon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	Z,ZK des, to take part in des	discussions, 2 discussions,
2041062 Mapped to the Com 2041063 Mapped to the Com	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. French - Bachelor Exam /FME	Z,ZK des, to take part in desemble to take part in desemble z,ZK des, to take part in desemble z,ZK	discussions, 2 discussions, 2 discussions,
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2041062 Mapped to the Com 2041063 Mapped to the Com 2041064 Mapped to the Com 2041065 Mapped to the Com	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. French - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Spanish - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Russian - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	Z,ZK ies, to take part in o	discussions, 2 discussions, 2 discussions, 2 discussions, 2 discussions,
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2041062 Mapped to the Com 2041063 Mapped to the Com 2041064 Mapped to the Com 2041065 Mapped to the Com 2046068 Aim: Basic voc	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. French - Bachelor Exam /FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Spanish - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Russian - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. English - Beginners abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p	Z,ZK ies, to take part in o	discussions, 2 discussions, 2 discussions, 2 discussions, 2 discussions, 2 discussions, 2 discussions,
2041062 Mapped to the Corr 2041063 Mapped to the Corr 2041064 Mapped to the Corr 2041065 Mapped to the Corr 2046068 Aim: Basic voc 2046069	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. French - Bachelor Exam /FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Spanish - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Russian - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. English - Beginners abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p	Z,ZK ies, to take part in o	discussions, 2 discussions,
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2041062 Mapped to the Com 2041063 Mapped to the Com 2041064 Mapped to the Com 2041065 Mapped to the Com 2046068 Aim: Basic voc 2046069	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. German - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. French - Bachelor Exam /FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Spanish - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. Russian - Bachelor Exam / FME mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level. English - Beginners abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p	Z,ZK ies, to take part in o	discussions, 2 discussions,

			1
2046070	English - Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	2 way about
7 iiii. Oriaci stariaii	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	writing in a simple	, way about
2046071	English - Lower Intermediate	Z	2
Mapped to the Co	ı mmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a s	student meets eithe	er at school
	time and speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improveme		
2046072	English - Upper Intermediate	Z	2
	d language skills taking into consideration professional English and common professional terminology. Comprehension of standard En	_	l
The diffice to exten	about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2		onvoroation
2046073	English - Upper Intermediate	Z	2
Mapped to the Co	ommon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli	sh and common pi	rofessional
terminology. Comp	rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedi	ate level. Broadeni	ng grammar
	knowledge.		
2046074	English - Advanced	Z	2
	hension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Written	_	l
· ·	ite a summary, a report, an essay, reading and comprehension of popular-scientific and scientific articles or texts from student's field		
	Grammar structures on advanced level. B1 - B2.	or ordanoo murour	
2046075		Z	2
	English - Advanced	_	1
	ommon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in English as well as lectures given in English as a discussion of Spoken English as well as lectures given in English as a discussion of Spoken English as well as lectures given in English as a discussion of Spoken English as well as lectures given in English as lectures given in English as well		
and active particip	pation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay reading and comprehen	nsion of popular-sc	entific and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	_	_
2046076	German - Beginners	Z	2
Basic voca	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	ge)
2046077	German - Beginners	Z	2
Mapped to the lev	rel Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an	d use of basic exp	ressions of
	general scientific terminology (professional language).		
2046078	German - Lower Intermediate Course	7	2
	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.		ı
7	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	······································	, way about
2046079	German - Lower Intermediate Course	7	2
	I		. –
	el of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a		
	e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvemen	it of professional ia	
2046080	German - Upper Intermediate Course	<u>Z</u>	2
Understanding st	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi	ences and
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046081	German - Upper Intermediate Course	Z	2
		_	l
Mapped to the lev	German - Upper Intermediate Course	nes across at work,	, at school,
Mapped to the lev	German - Upper Intermediate Course rel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com	nes across at work,	, at school,
Mapped to the level during free time, and 2046082	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students come talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding	nes across at work, ng general and tec	at school, hnical texts.
Mapped to the level during free time, at 2046082 Comprehension	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandin German - Advanced Course	nes across at work, ng general and tec Z n in discussions. E	at school, chnical texts. 2 expressing
Mapped to the level during free time, at 2046082 Comprehension opinions.	German - Upper Intermediate Course yel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a	nes across at work, ng general and tec Z n in discussions. E	, at school, thnical texts. 2 xpressing es.
Mapped to the let during free time, at 2046082 Comprehension opinions.	German - Upper Intermediate Course rel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students come and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and German - Advanced Course	nes across at working general and tec Z n in discussions. E and technical article	, at school, chnical texts. 2 xpressing es. 2
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2046096	Charles Deginners	Z	2
Allii.Onderstandii	Spanish - Beginners g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	_
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046097	Spanish - Beginners	Z	2
Mapped to the C	ommon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s	student meets at so	hool or in
his/her free tir	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	guage.
2046098	Spanish - Lower Intermediate	Z	2
Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	j in a simple way at	out familiar
00.40000	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046099	Spanish - Lower Intermediate	Z	2
	el of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of p		
2046117	Czech -Advanced	7	2
	CZECTT - Advanced spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	∠ cussions Expressir	
	en skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to		.g opoo.
2046118	Czech -Advanced	Z	2
	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec	n ch without great diff	iculties and
active participat	on in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	ion of popular-scie	ntific and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046119	Czech Language for Beginners I.	Z	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Cor	nmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	g and use of basic of	expressions
0040405	of general scientific terminology (professional language).	-	0
2046125	Czech Lower Intermediate Czech Lower Intermediate	Z	2
Aim: Understandin	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	whiting in a simple	way about
2046126	Czech Lower Intermediate	7	2
	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	. – .	
7 3.143.344.14.1	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		ay abbat
2046127	Czech - Upper Intermediate	Z	2
1	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	ences and
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046128	Czech - Upper Intermediate	Z	2
	nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	-	
terminology. Cor	nprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm	ediate level. Broad	ening the
0040405	knowledge technical language.	7	
2046135	Russian - Beginners	Z	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p		
	Puggion Paginnara	7	
2046136	Russian - Beginners	Z	2
	el of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	Z	2
Mapped to the lev	el 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)	Z and use of basic e	2 xpressions
Mapped to the lev	el of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	Z and use of basic e	2 xpressions
Mapped to the lev	el 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) Russian - Lower Intermediate Course	Z and use of basic e	2 xpressions
Mapped to the lev	el 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) Russian - Lower Intermediate Course arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	Z and use of basic e	2 xpressions
Mapped to the level 2046137 Understanding cless 2046138	el 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) Russian - Lower Intermediate Course arly 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.	Z and use of basic e	2 xpressions 2 pout familiar
2046137 Understanding cless 2046138 Mapped to the leve	el 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) Russian - Lower Intermediate Course arly 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. Russian - Lower Intermediate Course el of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a studer and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Z and use of basic e Z g in a simple way at	2 xpressions 2 cout familiar 2 or in his/her gge.
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2046137 Understanding cles 2046138 Mapped to the lever free time are 2046139	Russian - Lower Intermediate Course arly 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. Russian - Lower Intermediate Course arly 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. Russian - Lower Intermediate Course all of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student of speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. Russian - Upper Intermediate andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	Z and use of basic e Z g in a simple way at Z nt meets at school or of essional langua	2 xpressions 2 cout familiar 2 or in his/her ge. 2
2046137 Understanding clea 2046138 Mapped to the leve free time a 2046139 Understanding st	Russian - Lower Intermediate Course arly 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. Russian - Lower Intermediate Course arly 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. Russian - Lower Intermediate Course and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. Russian - Upper Intermediate andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	Z and use of basic e Z g in a simple way at Z at meets at school or ofessional langua Z to describe experie	2 cout familiar 2 cor in his/her ge. 2 ences and
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rinciples of ISO GPS (Geometrical Products Specification), Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface texture, geometrical tolerar dimensional loops, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their knowledge from lectures. 2131005		simplified solution of unsteady flow. Basic information on more complicated problems (laminar and turbulent flow, boundary layer the		
dimensional loops, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their knowledge from lectures. 2131005 ZK 3 Development of human knowledge in the domain of science and technology in the retrospective of the development of our civilization. Emphasis is given upon new branches c technology with special attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine industry in the narrower sense of the word 2131026 Machine Elements and Mechanisms II ZK 3 retiminary design, design calculations and aplication of axles and shafts, skiding and rolling bearings, shaft connections, elements of crank mechanism, pipelines and their accessor and fittings. 2131512 Machine Elements and Mechanisms II Z,ZK 6 sinits and joining elements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cottes, keys). Mechanical transmissif (beth, chain, friction, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded connecting blots, champed, retired, generally and the projects and their simple assembly units is also indispenses, splined and key joints between shafts and hubs and tasks with welded and riveted joints. Skitching of machine elements and their simple assembly units is also indispenses, splined and key joints between shafts and hubs and tasks with welded and riveted joints. Skitching of machine elements and their simple assembly units is also indispenses, splined and key joints between shafts and hubs and tasks with welded and riveted joints. Skitching of machine elements and their simple assembly units is also indispenses, splined and key joints between shafts and hubs and tasks with welded and riveted joints. Skitching of machine elements and their simple assembly units is also indispenses. 2132091	2131002	Engineering Design II	Z,ZK	4
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2152001 Departmental Project V7 2	2146061		Z	2
ZIJZUBI DEPAITIETIAI FIUJEUL NZ Z	2152091	Deparmental Project	KZ	2

	Fundamentals of Energy Conversions	Z	1
2153991	Bachelor Thesis	Z	4
2162091	Project Student will be informed about basics of environmental engineering and creation of thermal comfort.	KZ	2
2163991	Bachelor Thesis	Z	4
	final individual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is from previous study periods.		d knowledg
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	ransport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical	•	1
	continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and ther		
	systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		•
2182019	Chemistry	KZ	3
	r from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties), chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher		-
2182091	oriented upon the material properties measurement.	KZ	2
2102091	Project Absolvent se seznámí se základy oboru Procesní technika.	KΔ	2
2183991	Bachelor Thesis	Z	4
		KZ	2
2222091	Project		_
2223991	Bachelor Thesis	Z	4
2311101	Mechanics I.	Z,ZK	4
echanics I deals v	vith the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their sys	tems with and wi	thout friction
	There are introduced the methods of description of position and motion of particles and rigid bodies.		1 -
2311102	Mechanics II.	Z,ZK	4
•	and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, s		
eneral spatial moti	on. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vect	•	ical metho
0011107	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechan		
2311107	Mechanics III.	Z,ZK	7
lechanics III deals	with the basic concepts of dynamics. Methods of solving the dynamics of mass particle and body motion and their systems are described in a substance of systems.	cribed. Methods to	or describi
0040004	and solving vibrations of systems.	1/7	
2312091	Project	KZ	2
0040004	Individual asignment	7	
2313991	Bachelor Thesis Individual assignment	Z	4
231A101	Mechanics I.A	ZK	2
231A102	Mechanics II.A	ZK	2
231A107	Mechanics III.A	ZK	4
2321039	Materials Science II.	Z,ZK	4
undamentals of m	etallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materi		l processir
2322029	Materials Science I.	KZ	3
History and prese	nt state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defor	mation, recrystall	ization and
fracture of mate	rials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, ir	on-carbon phase	diagram.
2322091	Project	KZ	2
n the basis of the	preliminary submission of a bachelor thesis the students, under supervision of their supervisors, prepare a review summarizing and e	valuating the stud	lied literatu
	nphasis on experimental technologies which can be applied in their bachelor theses. They can also mention a planned experiment o	evaluate hitherte	obtained
with particular er		evaluate filtilett	
with particular er	knowledge or results.	evaluate filtiferti	
with particular er		Z	4
2323991	knowledge or results.		4
·	knowledge or results. Bachelor thesis		2
2323991	knowledge or results. Bachelor thesis Development of the bachelor thesis on an assignment under the supervision.	Z	
2323991 2332091 2333991	knowledge or results. Bachelor thesis Development of the bachelor thesis on an assignment under the supervision. Project Bachelor Thesis	Z KZ Z	2 4
2323991	knowledge or results. Bachelor thesis Development of the bachelor thesis on an assignment under the supervision. Project	Z KZ	2
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2372083	Measurement in Engineering	KZ	3
Overview of ser	nsor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	verification of me	asurement
	instruments.		
2372091	Project	KZ	2
	An individual project from the branch of specialisation, which student will study on his/her magister level		
2373991	Bachelor Thesis	Z	4
	Each student will solve his individual theme under guiding of his individual supervising department specialist. Result is his/her bach	elor thesis.	•
2381054	Management and Economics of the Enterprise	Z,ZK	4
The course is des	igned to give students the understanding of economic principles. The economical part of the course is consisted from: explanation of r	elationship betwe	en costs and
revenues, expens	ses and income, concept of investment and calculations per product, presentation how to assemble a basic operating budget and exp	lanation of the bas	sic structure
of the financial st	atements. The management introduces the basic managerial functions and their contents, the uses of network analysis in project mar	agement, with the	e application
	of multi-criteria decision, the basics of marketing and strategic management.		
2382091	Specialization Project	KZ	2
2383001	Fundamentals of Law	Z	2
Basic orientation	ı İn legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provid	de a view into the	Czech Legal
Order, particular s	sources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is n	ecessary for stud	ents to know
	ons, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.	•	
-	know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relation		
leads students to	to prepare professional presentations and to understand basic structures between law and engineering	Ships and to make	e tileili leady
2383008	Managerial Psychology	Z	2
2383009	Communication and Dealing with People	7	2
	ication represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (. –	_
riaman commun	the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.	with specific modi	ilications) to
2383019	Philosophical Issues Of Individual and Science	Z	2
2383991	Bachelor Thesis	Z	4
2363991			4
1/22/22	Work on specialized tasks related to the focus of a thesis.		
K331068	Technology I	Z,ZK	5
Foundry properties	s of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form	• .	emi-products
	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatmen		_
K333038	Fundamentals of Technology I.	Z	3
	sses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, techi		
iron and steel. Ca	asting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tecl	nnology. Hot and	cold forging.
Free and drop f	orging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of well-	ding. Fusion weld	ing: Flame
	welding and arc welding with coated electrodes. Thermal cutting.		
K341014	Technology II.	Z,ZK	5
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For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2024-05-19, time 03:20.