Study plan

Name of study plan: 08 40 45 52 DSTR KPP 2012 K základ

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch: Program of study: Welcome page Type of study: unknown combined

Required credits: 96

Elective courses credits: 142 Sum of credits in the plan: 238

Note on the plan: SP12DSTR-K MUSTR # SP12DSTR-TZP-K # SP12BSTR-TZP-K # první pokus

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 49

The role of the block: P

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

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

Requirement credits in the group: In this group you have to gain 22 credits

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

Credits in the group: 22 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2351110	Modeling and simulation I. Petr Mašek, Miroslav Ondrá ek, Tomáš Lazák, Jan Smolík, Tomáš Krannich, Josef Kekula, Petr Kolá, Vojt ch Matyska Jan Smolík Jan Smolík (Gar.)	Z,ZK	5	2P+2C+0L	*	Р
2211581	Transmissions Ji í Pakosta Ji í Pakosta Ji í Pakosta (Gar.)	Z,ZK	5	2P+2C	*	Р
2311073	Simulation of Mechanical Systems Zbyn k Šika	Z,ZK	6	2P+3C	*	Р

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

		P					
2351110	Modeling and simulation I.	Z,ZK	5				
The subject is focused	The subject is focused on explanation of the design of machine tool axis by individual parts and components.						
2211581	Transmissions	Z,ZK	5				
The course provides a	general summary of transmissions for various applications which the student in the specialization designer-calculator meets.	The gearing basic	s of production				
and transport machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission devices of motor vehicles.							
2311073	Simulation of Mechanical Systems	Z,ZK	6				

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

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

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

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

Credits in the group: 4 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2112092	Department Project	KZ	4	0P+6C	*	Р
2122092	Department Project	KZ	4	0P+6C	*	Р
2352092	Specialization Project Vladimír Andrlík Vladimír Andrlík (Gar.)	KZ	4	0P+6C+0L	*	Р

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

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

2112092	Department Project	KZ	4				
2122092	Department Project	KZ	4				
The content of the subject	The content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the department.						
2352092	Specialization Project	KZ	4				

The course is focused on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student will get acquainted with the problems of manufacturing machines and the equipment, respectively its parts according to the orientation of their work, and during regular weekly consultations with the supervisor proceed in professional solution of the problem. At the end of the semester students present their work on small oral examination in which they present the work performed, the coherence and meaning

2212092	Project	KZ	4
Basic practical skills of	•		
2312092	Department project	KZ	4
Individual asignment		•	
2132092	Project	KZ	4
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Elaboration of semester global project of mechanical drive of conveyor composed of electric motor, elastic shaft coupling (respectively V-belt drive), gearbox provided with two pairs of mating gears and compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechanical drive is provided instead of previous gearbox and additional mechanical drives by means of only one single-stage warm gearbox.. Elaboration of 4 additional reports analysing production and economic problems of assigned machine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism and its flywheel for assigned single-cylinder piston engine.

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

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

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

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

Credits in the group: 23 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2131120	Design of Steel Structures Zden k ešpíro	Z,ZK	6	2P+2C	*	Р
2351117	Vladimír Andrlík Vladimír Andrlík Vladimír Andrlík (Gar.)	Z,ZK	5	2P+0C+2L	*	Р

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

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

Code of the group: 12DSK1P-KMEN

Name of the group: 00 2012 D kmenové 1. semestr STR kombinované

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

Credits in the group: 0

Note on the group: 12B**1P-KMEN#

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
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
2011021	Constructive Geometry Ivana Linkeová	Z,ZK	6	3P+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

2372041	Computer Support for Study Vladimír Hlavá	KZ	3	1P+1C	*	Р
K333038	Fundamentals of Technology I.	Z	3	8B	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DSK1P-KMEN Name=00 2012 D kmenové 1. semestr STR kombinované

2182019 | Chemistry | KZ | 3 General chemistry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and 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.

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 relations.

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 between concepts. Students will also get to know the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: eigennumbers and eigenvectors of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.

2372041 Computer Support for Study

The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations with the use of computers. Students gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical-based WWW page.

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, technology 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: 12DSK2P-KMEN

Name of the group: 00 2012 D kmenové 2. semestr STR kombinované

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

Credits in the group: 0

Note on the group: 12B**2P-KMEN #

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
2021041	Physics I.	Z,ZK	7	4P+1L	*	Р
2011062	Matematika II. Radka Keslerová	Z,ZK	8	4P+4C	*	Р
2322029	Materials Science I. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková Jana Sobotová Jana Sobotová (Gar.)		3	2P+1L	2	Р
2012037	Computer Graphics Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka Ivana Linkeová Ivana Linkeová (Gar.)	KZ	3	1P+1C	*	Р
2131002	Engineering Design II Eliška Cézová, Jan Flek, Jan Kanaval, Karel Petr, Martin Dub, Martin Havlí ek, Jan Hoidekr, František Lopot, Roman Uhlí Karel Petr Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Р

Characteristics of the courses of this group of Study Plan: Code=12DSK2P-KMEN Name=00 2012 D kmenové 2. semestr STR kombinované

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, 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.

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. 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.

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, deformation, recrystallization and fracture of materials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, iron-carbon phase diagram.

2012037	Computer Graphics	KZ	3				
2131002	Engineering Design II	Z,ZK	4				
Principles of ISO GPS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface texture, geometrical tolerance							

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.

Code of the group: 12DSK3P-KMEN

Name of the group: 00 2012 D kmenové 3. semestr STR kombinované

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

Credits in the group: 0

Note on the group:

12B**3P-KMEN #

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
2021025	Physics II.	Z,ZK	4	1P+2L	3	Р
2011009	Mathematics III Radka Keslerová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Tomáš Neustupa, Stanislav Kra mar Stanislav Kra mar (Gar.)	Z,ZK	5	2P+2C	*	Р
2311101	Mechanics I. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Zbyn k Šika Zbyn k Šika (Gar.)	Z,ZK	4	2P+2C	*	Р
2321039	Materials Science II. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková, Jan Walter, Jana Sobotová Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2133013	Engineering Design III. Jan Kanaval, Jan Hoidekr, František Lopot, David Skalický, Roman Uhlí Jan Kanaval Jan Kanaval (Gar.)	Z	2	0P+2C	Z	Р
2012035	Algorithmization and Programming Fundamentals Ji i Holman, Marta ertiková, Vladimír Hric, Lukáš Hájek, Jan Halama, Vladimír Prokop, Martin Hanek, Jan Karel, Josef Musil, Petr Svá ek Petr Svá ek (Gar.)		4	1P+2C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DSK3P-KMEN Name=00 2012 D kmenové 3. semestr STR kombinované

2021025	Physics II.	Z,ZK	4				
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 ex	periments related	to the lectures.				
2011009	Mathematics III	Z,ZK	5				
An introductory course	n 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 their	systems with and	without friction.				
There are introduced th	e methods of description of position and motion of particles and rigid bodies.						
2321039	Materials Science II.	Z,ZK	4				
Fundamentals of metal	urgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and	d thermo-mechar	nical processing,				
technical iron-carbon a	loys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.						
2133013	Engineering Design III.	Z	2				
Design of assembly uni	t (draft drawing, detail drawing, assembly drawing, technical report)						
2012035	Algorithmization and Programming Fundamentals	KZ	4				
Programming in MATLA	B and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Mat	rices, vectors and	d operations.				
Writting M-script. Input	Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Systems of linear equations. Scripts						
and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. Structures. Algorithmization of							
simple programs: minin	imple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of systems of linear equations.						

Code of the group: 12DSK4P-KMEN

Name of the group: 00 2012 D kmenové 4. semestr STR kombinované

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

Credits in the group: 0

Note on the group.

12B*K4P-KMEN #

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
2311102	Mechanics II. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Václav Bauma Václav Bauma (Gar.)	Z,ZK	4	2P+2C	*	Р
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
2133014	Engineering Design IV. František Lopot František Lopot František Lopot (Gar.)	Z	2	0P+2C	L	Р
K331068	Technology I	Z,ZK	5	16B	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DSK4P-KMEN Name=00 2012 D kmenové 4. semestr STR kombinované

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2311102	Mechanics II.	Z,ZK	4				
Kinematics of point and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, spherical motion, screw mo							
general spatial moti	general spatial motion. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vector method. Graphical metho						
in kinematics. Basic	theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms.						
2011049	Numerical Mathematics	Z,ZK	4				
Numerical solution	of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Nume	rical solution of or	dinary differential				
equations, initial an	d boundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.						
2133014	Engineering Design IV.	Z	2				
K331068	Technology I	Z,ZK	5				
Foundry properties of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of forming processes. Semi-products,							
heating-up. Cutting.	Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatment.						

Code of the group: 12DSK5P-KMEN

Name of the group: 00 2012 D kmenové 5. semestr STR kombinované

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

Credits in the group: 0

Note on the group: 12B*K5P-KMEN#

Note on the gro	ир.					
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 quarantors (gar.)	Completion	Credits	Scope	Semester	Role
2131512	Machine Elements and Mechanisms I. František Lopot	Z,ZK	6	3P+2C	*	Р
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák Zuzana Sedlecká Jan Chyský (Gar.)	Z,ZK	4	2P+06C+1.4L	*	Р
2372083	Measurement in Engineering Martin Novák, Vladimír Hlavá Martin Novák Martin Novák (Gar.)	KZ	3	1P+0C+2L	*	Р
K341014	Technology II.	Z,ZK	5	8KP+8KC	*	Р
2153005	Fundamentals of Energy Conversions	Z	1	1P+1C	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DSK5P-KMEN Name=00 2012 D kmenové 5. semestr STR kombinované

2131512	Machine Elements and Mechanisms I.	Z,ZK	6	
Joints and joining eleme	nts (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters	s, keys). Mechanic	al transmissions	
(belt, chain, friction, gea	r drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloade	ed connecting bolf	ts, clamped,	
pressed, splined and ke	y joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple as	sembly units is als	so indispensable	
seminar work.				

2141504 | Electric Circuits and Electronics | Z,ZK | 4
Introduction into theory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of energy. El. Power and Energy.
Introduction into electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilizer, power control, operational

Introduction into electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilizer, power control, operational amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprocessor.

2372083 Measurement in Engineering KZ 3
Overview of sensor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and verification of measurement instruments.

K341014	Technology II.	Z,ZK	5
2153005	Fundamentals of Energy Conversions	Z	1
2383001	Fundamentals of Law	Z	2

Basic orientation in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provide a view into the Czech Legal Order, particular sources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is necessary for students to know our legal institutions, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws. At the same time the course leads students to know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relationships and to make them ready to prepare professional presentations and to understand basic structures between law and engineering

Code of the group: 12DSK6P-KMEN

Name of the group: 00 2012 D kmenové 6. semestr STR kombinované

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

Credits in the group: 0

Note on the group: 12B**6P-KMEN #

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2371047	Automatic Control Milan Hofreiter, R žena Petrová, Tomáš Vyhlídal, Jaromír Fišer Tomáš Vyhlídal Tomáš Vyhlídal (Gar.)	Z,ZK	5	3P+15C+05L	*	Р
2131026	Machine Elements and Mechanisms II Eliška Cézová, Jan Flek, Jan Kanaval, Karel Petr, Zden k ešpíro, Martin Dub, František Lopot, Ji í Houkal František Lopot František Lopot (Gar.)	ZK	3	3P+0C	*	Р
2141505	Electrical machines and drives Jan Chyský, Jaroslav Novák, Lukáš Novák Jaroslav Novák Jaroslav Novák (Gar.)	Z,ZK	4	2P+08C+1.4L	*	Р
2133025	Design František Lopot František Lopot (Gar.)	Z	4	0P+4C	*	Р
2381054	Management and Economics of the Enterprise Theodor Beran, Št pánka Uli ná, Vladimír Brdek, Ladislav Vaniš, Petr Žemli ka Theodor Beran Theodor Beran (Gar.)	Z,ZK	4	2P+2C	*	Р
2181026	Momentum, Mass and Heat Transfer Martin Dostál, Vojt ch B lohlav, Stanislav Solna, Jan Sko ilas, Tomáš Jirout, Adam Krupica, Ji í Moravec Tomáš Jirout Tomáš Jirout (Gar.)	Z,ZK	5	3P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DSK6P-KMEN Name=00 2012 D kmenové 6. semestr STR kombinované

Automatic controllers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatic control theory and practice like transfer functions, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrates on logic control and control via programmable logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Students begin to work with MATLAB software as a common platform of control engineers.

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 mechanism, pipelines and their accessories

and fittings. 2141505 Electrical machines and drives

AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transformer, principle, construction, 3-phase transformer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-torque characteristic, speed control. Synchronous machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque characteristic. Low-voltage instruments. Low-voltage distribution system.

2133025 Design Design, design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft couplings and clutches.

Management and Economics of the Enterprise 4

The subject is intended to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasoning and to help them understand the basic relationships between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audience to be able to communicate with economists in organizations, every product or service is valued at a selling price and therefore it is necessary to understand the simple costing of products and services. Every technician will encounter reports and should understand the basic structure of financial statements. As a future manager, he will compile and approve the operating budget. In the field of management, they will learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project management. For decision-making purposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be introduced.

2181026 Momentum, Mass and Heat Transfer

Z,ZK Fundamentals of transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical energy equation. Residence time distributions in continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and thermal radiation. Multicomponent systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 15

The role of the block: PV

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

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

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

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

Credits in the group: 2

Note on the group:

Ze skupiny humanitních předmětů nutno j e d e n absolvovat

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2383009	Communication and Dealing with People Vladimír Brdek, Jan Horejc Jan Horejc Jan Horejc (Gar.)	Z	2	1P+1C	*	PV

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

2383009 Communication and Dealing with People

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

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

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

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

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

Credits in the group: 2

Note on the group:

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

oblasti odborné terminologie

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

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

2041061	English-Bachelor Exam	Z,ZK	2						
Mapped to the Common	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 re	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 Common	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 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 Common	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 Common	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 Common	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 re	write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.								

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

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

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

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

Credits in the group: 2

Note on the group:

Student si vybere předmět příslušný oboru, který studuje

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

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

2372091	Project	KZ	2
An individual project fro	m the branch of specialisation, which student will study on his/her magister level		
2362091	Project	KZ	2

2152091	Deparmental Project	KZ	2		
2182091	Project	KZ	2		
Absolvent se seznámí	Absolvent se seznámí se základy oboru Procesní technika.				

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

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

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

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

Credits in the group: 4

Note on the group:

2363091 nesepsán Student si vybere předmět příslušný oboru, který studuje

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

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

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

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

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

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

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

Credits in the group: 5 Note on the group:

Name of the block: Elective courses

Minimal number of credits of the block: 32

The role of the block: V

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

Name of the group: 02 2012 ALFA volitelné pro STR

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

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

Credits in the group: 32

Předměty typu Alfa (A) nejsou u studijního programu B2341 Strojírenství povinné, avšak jsou Note on the group: povinné u studijního programu B2342 Teoretický základ strojního inženýrství.

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

201A009	Mathematics III.A Stanislav Kra mar	ZK	2	0P+0C	*	V
201A049	Numerical Mathematics A Lud k Beneš	ZK	2	0P+0C	*	V

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

202A041	Physics I.	ZK	3			
Kinematics and dynamic	es of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic	properties of bod	lies. Oscillations,			
waves. Fluid mechanics	vaves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors,					
insulators. Magnetic field	d. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and inc	lirect measureme	nts, regression,			
measurements of 11 va	rious experiments related to the lectures.					
202A025	Physics II.A	ZK	2			
Faraday's law of electron	araday'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.

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 relations.

201A021	Constructive Geometry A	ZK	3
The subject is focused of	on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.		
201A056	Mathematics I.A	ZK	4
Introduction to linear alg	gebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable		
201A062	Mathematics II.A	ZK	4
Open and closed set, be	oundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differe	ntial operators di	v (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.

201A009	Mathematics III.A	ZK	2
201A049	Numerical Mathematics A	ZK	2

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

Name of the group: 05 2012 doporu ené seminá e

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

Credits in the group: 0

Note on the group:

Pokud si chce student své dosud získané znalosti (například z matematiky, fyziky, cizích jazyků atd.) doplnit, může si zapsat některý z volitelných předmětů, které příslušné ústavy pro 1. semestr (zimní) vypisují. Doporučujeme zejména předměty uvedené v této skupině

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2026016	Physics - Seminar	Z	2	0P+2C	1	V
2016007	Mathematics I Seminar Radka Keslerová, Hynek ezní ek, Olga Majlingová Radka Keslerová Gejza Dohnal (Gar.)	Z	2	0P+2C	1	V

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

	and doubled or anne group or enably riam doubt in a respective				
2026016	Physics - Seminar	Z	2		
The subject is mainly m	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 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) **English Conversation** 2046155 7 2 0P+2C ۱/ Ilona Šimice, Michele Le Blanc Ilona Šimice Michele Le Blanc (Gar.) **English Conversation** Ζ 2 2046156 0P+2C L ٧ Ilona Šimice, Michele Le Blanc **English - Lower Intermediate** 2046071 Ζ 2 0P+2C L ٧ Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová

2046070	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	Z	V
2046074	Michaela Schusová Ilona Šimice (Gar.) English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046072	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046073	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046068	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046069	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046126	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046125	Czech Lower Intermediate		2	0P+2C	Z	V
2046118	Jaroslava Kommová Czech -Advanced	Z	2	0P+2C	L	V
	Jaroslava Kommová Czech -Advanced					
2046117	Jaroslava Kommová	Z	2	0P+2C	Z	V
2046127	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046128	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046119	Czech Language for Beginners I. Jaroslava Kommová	Z	2	0P+2C	Z	V
2046120	Czech Language for Beginners II. Jaroslava Kommová	Z	2	0P+2C	L	V
2046086	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046087	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046091	French - Advanced Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046088	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Michaela Schusová (Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046084	French - Beginners Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046085	French - Beginners' Course Michaela Schusová, Dušana Jirovská Michaela Schusová Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2146060	Indonesian Language Course for Exchange	Z	2	0P+2C	*	V
2146061	Technical Indonesian - Course I.	Z	2	0P+2C	Z	V
2144062	Technical Indonesian - Course II.	Z,ZK	3	1P+2C	L	V
2046078	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046079	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046083	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046082	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V

2046081	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046080	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046076	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Petr Laurich (Gar.)	Z	2	0P+2C	Z	V
2046077	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046161	Presentations in English Michaela Schusová	Z	2	0P+2C	*	V
2046166	Presentations in Czech Jaroslava Kommová	Z	2	0P+2C	*	٧
2046162	Presentations in German Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	*	V
2046164	Presentations in Russian Dušana Jirovská	Z	2	0P+2C	*	V
2046163	Presentations in French language Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	*	٧
2046165	Presentations in Spanish Eliška Vítková	Z	2	0P+2C	*	٧
2046137	Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046138	Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046141	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046142	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046140	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046139	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046136	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046135	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046099	Spanish - Lower Intermediate Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V
2046098	Spanish - Lower Intermediate Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046096	Spanish - Beginners Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046097	Spanish - Beginners Michaela Schusová, Jaime Andrés Villagómez Jaime Andrés Villagómez Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V

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

curzy a prezentace		
2046155 English Conversation	Z	2
Improving communicative skills in speaking on general topics and general technical topics.		
2046156 English Conversation	Z	2
Improving communicative skills in speaking on general topics and general technical topics.		
2046071 English - Lower Intermediate	Z	2
Mapped to the Common European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a	a student meets	either at school
or at his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improveme	ent of professiona	al language.
2046070 English - Lower Intermediate	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about then	n. 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
The aim: comprehension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writte	en and oral skills	on advanced
level. Ability to write a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's field	d of studies withou	out difficulties.
Grammar structures on advanced level. B1 - B2.		
2046075 English - Advanced	Z	2
Mapped to the Common European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in Er	nglish without gre	eat difficulties
and active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and comprehence	ension of popula	r-scientific and
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		

2046072	English - Upper Intermediate	Z	2
	guage skills taking into consideration professional English and common professional terminology. Comprehension of standar		
	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 E nsion of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on interi	-	-
knowledge.			g g
2046068	English - Beginners	Z	2
Aim: Basic vocabulary	of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional langua	
2046069	English - Beginners	Z	2
* *	n European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understa ninology (professional language).	nding and use of ba	isic expressions
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 th	em. Writing in a sin	nple way about
	and comprehension of simple texts. Improvement of professional language.		
2046125	Czech Lower Intermediate	Z Z	2
-	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about th and comprehension of simple texts. Improvement of professional language.	em. writing in a sin	ipie way about
2046118	Czech -Advanced	Z	2
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in	1	
	discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehensions and advanced level.	nsion of popular-sc	ientific and
	s from student's field of studies without difficulties. Grammar structures on advanced level.	7	
2046117	Czech -Advanced een language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	Z Z	2 essing oninions
	write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical a		occing opinions.
2046127	Czech - 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. Abi	lity to describe exp	eriences and
	ne's opinions and plans. Reading and understanding general and technical texts.		
2046128	Czech - Upper Intermediate n European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professiona	Z	2
* *	nsion of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inte		-
knowledge technical la			
2046119	Czech Language for Beginners I.	Z	2
	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profer		
2046120	Czech Language for Beginners II.	Z	2
	n European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understa ninology (professional language).	nding and use of ba	isic expressions
2046086	French - Lower Intermediate Course	Z	2
Understanding clearly	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. W	riting in a simple wa	ay about familiar
	mprehension of simple texts. Improvement of professional language.		
2046087	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which	Z	2
• •	common European Framework of Reference. Az Alm. Onderstanding clearly what is spoken about everyday situations which eaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
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	opics familiar to the	student.
	tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a	ind understanding t	exts concerning
	ular scientific and technical articles.	7	2
2046090	French - Advanced remains the properties on topics remails to the student. Communication with native speakers, participation of the student. From the properties of the proper	Z Z	2 Expressing
	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t		
2046089	French - Upper Intermediate	Z	2
	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students of		
-	lking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and underst	anding general and	
2046088	French - Upper Intermediate I speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abi		2 eriences and
-	ne's opinions and plans. Reading and understanding general and technical texts.	ity to describe exp	orioriocs and
2046084	French - Beginners	Z	2
	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
	mprehension of simple texts. Improvement of professional language.		
2046085	French - Beginners´ Course Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations whicl	Z	2
	eaking 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		
	Technical Indonesian - Course I.	Z	2
2146061	ian Language for Student Exchange Program to Indonesia		
Second part of Indones	T 1 : 11 1 : 0 "		
Second part of Indones 2144062	Technical Indonesian - Course II.	Z,ZK	3
Second part of Indones 2144062 Basic of Indonesian La	nguage for Student Exchange Program to Indonesia		
Second part of Indones 2144062 Basic of Indonesian La 2046078		Z	2

2046079	Company I assert Internacy dista Course	_	
Mannadtathalavala	German - Lower Intermediate Course	Z	2
* *	of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whi		
or in his/her free time	and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement	ent of professional	language.
2046083	German - Advanced Course	Z	2
Mapped to the level of	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given i	in German without	great difficultie
and active participati	on in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compi	rehension of popula	ar-scientific and
scientific articles or to	exts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046082	German - Advanced Course	Z	2
Comprehension of sp	oken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participa	tion in discussions.	Expressing
opinions. Written skill	s. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t	echnical articles.	
2046081	German - Upper Intermediate Course	Z	2
Mapped to the level of	f Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students	comes across at w	ork, at school,
	talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and underst		
2046080	German - Upper Intermediate Course	Z	2
	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abi	lity to describe exp	eriences and
-	on one's opinions and plans. Reading and understanding general and technical texts.		
2046076	German - Beginners	Z	2
	everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes		_
-	an Framework of Reference for Languages A1.	oo.oa. lagaago, .	. componed :
2046077	German - Beginners	Z	2
	୍ୱା ଓଟାମାଣୀ - Beginners Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding		
* *	ninology (professional language).	g and use of basic t	expressions or
		7	
2046161	Presentations in English	Z	2
	present in English on technical topics, with a possible co-operation with specialized departments.		
2046166	Presentations in Czech	Z	2
<u>·</u>	give presentations in English on technical topics, with a possible co-operation with specialized departments.		
2046162	Presentations in German	Z	2
Preparation for prese	nting technical topics in German, possibly in cooperation with specialized departments.		
2046164	Presentations in Russian	Z	2
Preparation for prese	nting technical topics in Russian, possibly in cooperation with specialized departments.	'	
2046163	Presentations in French language	Z	2
	nting technical topics in French, possibly in cooperation with specialized departments.	- 1	_
2046165	Presentations in Spanish	Z	2
	nting technical topics in Spanish, possibly in cooperation with specialized departments.		2
2046137	Russian - Lower Intermediate Course	Z	2
Understanding clearl	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 w	ay about familia
Understanding clearl topics. Reading and	comprehension of simple texts. Improvement of professional language.		
Understanding clearly topics. Reading and compared topics.	comprehension of simple texts. Improvement of professional language. Russian - Lower Intermediate Course	Z	2
Understanding clearl topics. Reading and of 2046138 Mapped to the level of	comprehension of simple texts. Improvement of professional language. Russian - Lower Intermediate Course of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a st	Z tudent meets at sch	2
Understanding clearl topics. Reading and of 2046138 Mapped to the level of free time and speaking	comprehension of simple texts. Improvement of professional language. Russian - Lower Intermediate Course	Z tudent meets at scl essional language.	2 nool or in his/he
Understanding clearl topics. Reading and of 2046138 Mapped to the level of	comprehension of simple texts. Improvement of professional language. Russian - Lower Intermediate Course of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a st	Z tudent meets at sch	2
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Understanding clearl topics. Reading and of 2046138 Mapped to the level of free time and speaking 2046141 Comprehension of sp	Russian - Lower Intermediate Course of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stag about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professian - Advanced ooken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participations.	Z tudent meets at schessional language. Z tion in discussions.	2 nool or in his/he
Understanding clearl topics. Reading and of 2046138 Mapped to the level of free time and speaking 2046141 Comprehension of spopinions. Written skill 2046142	Russian - Lower Intermediate Course of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stag about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professian - Advanced poken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participats. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to	Z tudent meets at scl essional language. Z tion in discussions. echnical articles. Z	2 nool or in his/he 2 Expressing
Understanding clearl topics. Reading and of 2046138 Mapped to the level of free time and speaking 2046141 Comprehension of spopinions. Written skill 2046142 Mapped to the level of the speek of the spe	Russian - Lower Intermediate Course of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stag about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professian - Advanced poken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participates. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and the Russian - Advanced	Z tudent meets at scl essional language. Z tion in discussions. echnical articles. Z topics familiar to the	2 nool or in his/he 2 Expressing 2 e student.
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List of courses of this pass:

Code	Name of the course	Completion	Credits
2011009	Mathematics III An introductory course in ordinary differential equation and infinite series.	Z,ZK	5
2011021	Constructive Geometry The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation	Z,ZK	6
2011049	Numerical Mathematics	Z,ZK	4
	of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Numerical equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference	solution of ordinar	
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 connection the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: e of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.	-	
2011062	Matematika II.	Z,ZK	8
1 -	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different		
, , ,	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Greer		
'	be 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	· · · · · · · · · · · · · · · · · · ·	
	Gauss-Ostrogradskij theorem.	,	,
2012035	Algorithmization and Programming Fundamentals	KZ	4
	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matri Iput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste		
	ructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. St	•	
simple programs	: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of s	systems of linear e	quations.
2012037	Computer Graphics	KZ	3
2016007	Mathematics I Seminar	Z	2
201A009	Mathematics III.A	ZK	2
201A021	Constructive Geometry A The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation	ZK ons.	3
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 set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different	ZK	4
-	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,		
of integrals to pola	r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green	n's theorem. A pote	ential vector
field, independend	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 vector Gauss-Ostrogradskij theorem.	r field through a su	urface. The
2021025	Physics II.	Z,ZK	4
· ·	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electater. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	-	
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe	•	
2021041	Physics I.	Z,ZK	7
1	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	-	
	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co		
insulators. Magneti	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire measurements of 11 various experiments related to the lectures.	ci measurements,	regression,
2026016	Physics - Seminar The subject is mainly meant for high-school students for repetition of high-school physics.	Z	2
202A025	Physics II.A	ZK	2
I	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves.		
	atter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	-	
202A041	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiences. 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		-
1	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	-	
insulators. Magneti	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire	ct measurements,	regression,
2041061	measurements of 11 various experiments related to the lectures.	7 7K	2
2041061 Mapped to the Com	English-Bachelor Exam 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	2 discussions.
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
2041062	German - Bachelor Exam / FME	Z,ZK	2
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ies, to take part in	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		

2041063	French - Bachelor Exam /FME	Z,ZK	2
Mapped to the Com	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	ties, to take part in o	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2
Mapped to the Com	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	ties, to take part in o	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
2041065	Russian - Bachelor Exam / FME	Z,ZK	2
Mapped to the Com	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	ties, to take part in o	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
2046068	English - Beginners	Z	2
Aim: Basic voc	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional langua	age). A1
2046069	English - Beginners	Z	2
Mapped to the Con	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	expressions
	of general scientific terminology (professional language).		
2046070	English - Lower Intermediate	Z	2
Aim: Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.		
2046071	English - Lower Intermediate	Z	2
Mapped to the Co	mmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a	student meets eithe	er at school
or at his/her free	time and speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improvement	ent of professional I	anguage.
2046072	English - Upper Intermediate	Z	2
The aim is to exten	d language skills taking into consideration professional English and common professional terminology. Comprehension of standard Er	nglish speech and c	onversation
	about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2	- B1.	
2046073	English - Upper Intermediate	Z	2
	ommon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engl	ish and common pr	
	rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermed		
0, 1	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. Writte		
	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.		
2046075	English - Advanced	7	2
	pommon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in En		
1 1	pation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay reading and comprehe	-	
		HSIOH OF DODUIAL-SC	aenunc and 1
and dours particip		rision of popular-sc	aenunc and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	Z	
2046076	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. German - Beginners	Z	2
2046076	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	Z	2
2046076	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. German - Beginners f everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession	Z	2
2046076 Basic vocabulary o	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. German - Beginners f everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession the Common European Framework of Reference for Languages A1.	Z nal language) It cor	2 responds to
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Prench - Advanced Z Mapped to the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on topics familiar to the stude communication with native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concurrent issues and popular scientific and technical articles. 2046096 Spanish - Beginners Z Aim:Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way a familiar topics. Reading and comprehension of simple texts. Improvement of professional language. 2046097 Spanish - Beginners Z Mapped to the Common European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language 2046098 Spanish - Lower Intermediate Z Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. 2046099 Spanish - Lower Intermediate Z Mapped to the level of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. 2046099 Spanish - Lower Intermediate Z Mapped to the level of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and
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Mapped to the level of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in h
2046117 Czech -Advanced Z
Comprehension of spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in discussions. Expressing opi Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical articles.
2046118 Czech -Advanced Z
Vapped to the level of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czech without great difficulties
active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension of popular-scientific scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.
2046119 Czech Language for Beginners I. Z Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional language)
2046120 Czech Language for Beginners II.
Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions.
of general scientific terminology (professional language).
2046125 Czech Lower Intermediate Z Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.
2046126 Czech Lower Intermediate Z Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way a
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.
2046127 Czech - Upper Intermediate Z
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to describe experiences events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.
2046128 Czech - Upper Intermediate Z
Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Czech and common profes
terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening
knowledge technical language.
knowledge technical language. 2046135 Russian - Beginners Z
knowledge technical language. 2046135 Russian - Beginners Z Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional language)
knowledge technical language. 2046135 Russian - Beginners Z Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional language) 2046136 Russian - Beginners Z Mapped to the level of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expres
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knowledge technical language. 2046135 Russian - Beginners Z Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional language) 2046136 Russian - Beginners Z Mapped to the level of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic express of general scientific terminology (professional language) 2046137 Russian - Lower Intermediate Course Z Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about for topics. Reading and comprehension of simple texts. Improvement of professional language.
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2046141	Russian - Advanced	Z	2
•	spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation ritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific		
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2046142	Russian - Advanced rel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on t	_	I
	native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and	•	
Sommunication with	currant issues and popular scientific and technical articles.	understanding text	.s concerning
2046155	English Conversation	Z	2
2040100	Improving communicative skills in speaking on general topics and general technical topics.	_	
2046156	English Conversation	Z	2
2040130	Improving communicative skills in speaking on general topics and general technical topics.	_	
2046161	Presentations in English	Z	2
2040101	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.		2
2046162		Z	2
2040102	Presentations in German Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.		4
2046462		Z	2
2046163	Presentations in French language Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.		2
2046464	Presentations in Russian	Z	2
2046164	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.		2
2046465		7	
2046165	Presentations in Spanish	Z	2
0040400	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.	7	
2046166	Presentations in Czech	Z	2
0440000	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departm		
2112092	Department Project	KZ	4
2122092	Department Project	KZ	4
	e content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the	e department.	
2131002	Engineering Design II	Z,ZK	4
-	S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface	-	
	s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the		
2131026	Machine Elements and Mechanisms II	ZK	3
reliminary design, o	lesign calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism,	pipelines and thei	r accessories
	and fittings.	T	
2131120	Design of Steel Structures	Z,ZK	6
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
	ments (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, k		
•	n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloade		
oressea, spiinea and	key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple asser	mbly units is also i	naispensable
0400000	seminar work.	1/7	1 4
2132092	Project	KZ	4
Elaboration of Semi			ith tura naira
	ester global project of mechanical drive of conveyor composed of electric motor, elastic shaft coupling (respectively V-belt drive), ge	•	•
of mating gears and	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mech	nanical drive is pro	vided instea
of mating gears and of previous gearbox	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports analysing produced in the control of 4 additional reports and	nanical drive is pro duction and econo	vided instead mic problems
of mating gears and of previous gearbox	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mech	nanical drive is pro duction and econo	vided instead mic problems
of mating gears and of previous gearbox of assigned mack	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing produine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine.	nanical drive is pro duction and econo and its flywheel for	vided instead mic problems assigned
of mating gears and of previous gearbox a	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing produine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine. Engineering Design III.	nanical drive is pro duction and econo	vided instead mic problems
of mating gears and of previous gearbox and of assigned macles 2133013	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing produine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine. Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)	nanical drive is production and econo and its flywheel for	vided instead mic problems assigned
f mating gears and of previous gearbox and of assigned mack 2133013	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing provine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine. Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report) Engineering Design IV.	nanical drive is production and econo and its flywheel for Z	vided instead mic problems assigned
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of mating gears and of previous gearbox of assigned mack 2133013 2133014 2133025 Design,	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing province element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine. Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report) Engineering Design IV. Design design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coup	nanical drive is production and econo and its flywheel for Z Z Z Lings and clutches	vided instead mic problem: assigned 2 2 4
of mating gears and of previous gearbox of assigned mack 2133013 2133014 2133025 Design, 2141504	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing province element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine. Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report) Engineering Design IV. Design design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coup	nanical drive is production and econo and its flywheel for Z Z Ings and clutches Z,ZK	vided instearmic problem assigned 2 2 4
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of mating gears and of previous gearbox a of assigned mack 2133013 2133014 2133025 Design, 2141504 Introduction into the Introduction into e 2141505	compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mechand additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing province element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism a single-cylinder piston engine. Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report) Engineering Design IV. Design design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coupled transmissions, axles and Electronics ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of lectronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits, converters, microprofile amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprofile electrical machines and drives	ranical drive is production and econo and its flywheel for Z Z Ingredient Z Z Ingredient Z Z Ingredient Z I	vided instead mic problems assigned 2 2 4 4 and Energy. Operational
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	Momentum, Mass and Heat Transfer	Z,ZK	5
	ransport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical	0, 1	
time distributions in	continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and ther	mal radiation. Mult	icomponent
0400040	systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.	1/7	_
2182019	Chemistry r from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties	KZ	3
	, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher		-
priase equilibrium	oriented upon the material properties measurement.	mony. Laboratory	practice is
2182091	Project	KZ	2
2102031	Absolvent se seznámí se základy oboru Procesní technika.	IV.	_
2183091	Project Presentation	Z	4
2100001	Preparation and presentation of a given project theme.	_	•
2211581	Transmissions	Z,ZK	5
	s a general summary of transmissions for various applications which the student in the specialization designer-calculator meets. The		-
-	ort machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission device		-
2212092	Project	KZ	4
,	Basic practical skills of work with advanced CAD/CAE/CAM systems. Project training in solution of design task based on industry req	luirements.	ļi
2311073	Simulation of Mechanical Systems	Z,ZK	6
2311101	Mechanics I.	Z,ZK	4
· ·	rith the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their sys		nout friction.
	There are introduced the methods of description of position and motion of particles and rigid bodies.		
2311102	Mechanics II.	Z,ZK	4
	and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, sp		rew motion,
	on. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vector		
	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechan	nisms.	
2312092	Department project	KZ	4
<u>'</u>	Individual asignment		•
2321039	Materials Science II.	Z,ZK	4
Fundamentals of m	etallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and th	ermo-mechanical	processing,
	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of material	als.	
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, recrystalliz	zation and
fracture of mate	rials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, irr	on-carbon phase o	diagram.
2351110	Modeling and simulation I.	Z,ZK	5
	The subject is focused on explanation of the design of machine tool axis by individual parts and components.		r
2351117		Z,ZK	5
	Importance of fluid mechanisms and drives, principle, design and use. Divided on two parts - Hydraulics and Pneumatics.		
2352092	Specialization Project	KZ	4
	ed on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student will get	•	•
	achines and the equipment, respectively its parts according to the orientation of their work, and during regular weekly consultations was a state of the part of t	with the superviso	r proceed in
professional solution	on of the problem. At the end of the semester students present their work on small oral examination in which they present the work problem. At the end of the semester students present their work on small oral examination in which they present the work problem.	arfarmand the ach	-
2362091	meaning.	erformed, the cohe	-
	Project		erence and
2363091	Project Proportetion	KZ	erence and
0074047	Project Presentation	KZ Z	erence and 2 4
2371047	Project Presentation Automatic Control	KZ Z Z,ZK	2 4 5
Automatic controll	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatic	KZ Z Z,ZK ic control theory a	2 4 5 nd practice
Automatic controller	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatics, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate	KZ Z Z,ZK ic control theory at	2 4 5 nd practice
Automatic controller	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatis, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained.	KZ Z Z,ZK ic control theory at	2 4 5 nd practice
Automatic controll like transfer functior via programmable	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automati s, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. MATLAB software as a common platform of control engineers.	KZ Z,ZK ic control theory at tes on logic control Students begin to	2 4 5 nd practice and control work with
Automatic controllike transfer function via programmable 2372041	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatics, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. MATLAB software as a common platform of control engineers. Computer Support for Study	KZ Z,ZK ic control theory at tes on logic control Students begin to	2 4 5 nd practice and control work with
Automatic controll like transfer function via programmable 2372041 The course introduce	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatics, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. MATLAB software as a common platform of control engineers. Computer Support for Study es students into creating technical and professional documents on computers or Web and into realizing technical computations with the state of the control engineers.	KZ Z,ZK ic control theory at tes on logic control Students begin to KZ he use of compute	2 4 5 nd practice and control work with 3 rs. Students
Automatic controllike transfer functior via programmable 2372041 The course introduction gain practical	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatics, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. MATLAB software as a common platform of control engineers. Computer Support for Study es students into creating technical and professional documents on computers or Web and into realizing technical computations with the 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.	KZ Z,ZK ic control theory at tes on logic control Students begin to KZ he use of compute cal-based WWW p	2 4 5 nd practice and control work with 3 rs. Students page.
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Automatic controllike transfer functior via programmable 2372041 The course introduction gain practicate 2372083	Project Presentation Automatic Control ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatics, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrate logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. MATLAB software as a common platform of control engineers. Computer Support for Study es students into creating technical and professional documents on computers or Web and into realizing technical computations with the skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical measurement in Engineering or principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and the control of the province of the control of the province of the control of the control of the province of the control	KZ Z,ZK ic control theory at tes on logic control Students begin to KZ he use of compute cal-based WWW p	2 4 5 nd practice and control work with 3 rs. Students page. 3
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our legal institution	ons, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.	At the same time	the course
leads students to I	know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relation	ships and to make	them read
	to prepare professional presentations and to understand basic structures between law and engineering		
2383009	Communication and Dealing with People	Z	2
Human communi	cation represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (with specific modif	ications) to
	the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.		
K331068	Technology I	Z,ZK	5
oundry properties	of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form	ing processes. Se	mi-product
	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatment	t.	
K333038	Fundamentals of Technology I.	Z	3
Production proces	sses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, techn	ical metals. Produ	ction of pig
iron and steel. Ca	isting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tech	nology. Hot and c	old forging.
Free and drop f	orging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of welc	ding. Fusion weldir	ng: Flame
	welding and arc welding with coated electrodes. Thermal cutting.		
K341014	Technology II.	Z,ZK	5

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