Study plan

Name of study plan: 07 40 45 50 DSTR IAT 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: 101

Elective courses credits: 137 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: 54

The role of the block: P

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

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

Requirement credits in the group: In this group you have to gain 29 credits

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

Credits in the group: 29 Note on the group:

colour aberrations and basic visual instruments.

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
2361097	Design of Instruments	Z,ZK	5	3P+1C	*	Р
2371710	Computer Simulation Models	Z,ZK	4	2P+2C	*	Р
2373712	Project Vladimír Hlavá	Z	3	0P+2C	*	Р
2371524	Means of Automatic Control	Z,ZK	5	3P+0C+2L	*	Р
2371126	Programmable Controller Applications Jakub Jura Jakub Jura (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2362502	Technical optics	KZ	3	2P+15C+05L	*	Р

2361097	Design of Instruments	Z,ZK	5
Basics of instrumen	s design.		'
2371710	Computer Simulation Models	Z,ZK	4
The course provides	a basic knowledge on formulation and computer implementation of dynamical system models. It starts from theoretical issues	of Laplace and Z	ransform in the
application to descri	bing the continuous and discrete linear systems respectively. A particular emphasis is given on the skills in describing the dynar	nic processes in t	he state space
approach in both lin	ear and non-linear systems.		
2373712	Project	Z	3
Breaf introduction to	the SmartPlant projection software. The project from the informatics in the second half of this subject.	1	1
2371524	Means of Automatic Control	Z,ZK	5
Various categories	of means for automatic control according to the different criterions. Main features in each category. Air and hydraulic fluid as a me	edium for informat	ion transfer.
Symbols and descri	otions in pneumatic and hydraulic diagrams. Pneumatic control systems design. Pneumatic actuators, valves, special pneumatic,	electropneumatic	devices. Contro
valves, categories, c	imensioning, design, applications. Inteligent pneumatics as an integration of pneumatic, electronic and control components and sy	stems. Valve islan	ds and terminal
standard, with indus	trial buses communication, programmable. Pneumatic positioning systems.		
2371126	Programmable Controller Applications	Z,ZK	4
Logic control, Theor	of finite automaton - introduction, Petri nets -application for industrial processes control. Programmable Logic Controller (PLC), F	LCs in distributed	control systems
type sof PLC and ap	plication areas. Function principles of PLC, configuration, HW structure of PLC, PLC software. Standard IEC 1131-3: software,	program mand co	mmunication
model, common ele	ments of programming languages, standard and derived functions and function blocks, structuring resource - sequential functior	n diagram (SFC),	programming
anguages LD, IL, S	Г and FBD. Control applications design -methodology. Software tools for PLC programming. Industrial processes visualization. S	Systems of PLCs,	networking of
PLCs, communication	on possibilities of PLCs. Industrial communication standards (Profibus, ASi). Laboratory exercises on technological models via PL	Cs:Teco, Festo, So	chneider Electri
Siemens.			
2362502	Technical optics	KZ	3

The course gives a thorough interpretation of the principle of image forming by planar and spherical surfaces under the laws of geometric optics. It also deals with monochromatic and

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

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

Requirement credits in the group: In this group you have to gain 25 credits

Requirement courses in the group: In this group you have to complete 6 courses

Credits in the group: 25 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
2362503	Applied Optics	KZ	4	2P+15C+05L	*	Р
2141519	Electrical Measurement and Diagnostics	Z,ZK	4	2P+0C+1L	*	Р
2372507	Informatic systems	KZ	4	2P+2C	*	Р
2141006	Embedded systems Jan Chyský	Z,ZK	4	2P+0C+2L	*	Р
2361005	Instrumental Technology	Z,ZK	4	2P+0C+2L	*	Р

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

2362503	Applied Optics	KZ	4
The course introduc	es students to the functions of basic optical instruments and shows their applications.		'
2141519	Electrical Measurement and Diagnostics	Z,ZK	4
The transmission of	signals in measure systems. Electromagnetic compatibility. Electronics measurements circuits and a conversion of signal for the	transmission.	'
2372507	Informatic systems	KZ	4
Meanings of Informa	tion. Information theory. Channel capacity. Coding theory. Data coding, markup languages, XML. Cryptography. OSI Reference I	, Model. Transmissi	on media
(metallic, optical, wi	eless). Data link layer. Network layer, communication protocols, TCP/IP suite. Digitization of analog signals. Quantum information	n. Genetic informa	ation.
2141006	Embedded systems	Z,ZK	4
Computers and mic	ocomputers history. Block diagram of computer. Busses, processors, memories, input and output circuits. Single chip microcomp	uters, microcontro	ollers. Instructio
set, machine code,	issembler, ANSY-C language. Software and hardware tools for application developing. Simulator, emulator, logical analyzer. Con	nputer interfaces.	Converters,
digital input and out	out. Analogous signal discretization, methods and errors of D/A and A/D conversion. Standard analogous signal. Interrupt system	n. Practical labs a	re focused on
8051/52 microcomp	uter family.		
2361005	Instrumental Technology	Z,ZK	4
This subject gives s	udents a detail review of technology used for instrumentation production	•	!

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#

Z,ZK

6

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 mater	rial properties measurement.						

2011021 | Constructive Geometry
The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.

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

Code of the group: 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.)	KZ	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 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

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#

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
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 í Holman, Marta ertíková, Vladimír Hric, Lukáš Hájek, Jan Halama, Vladimír Prokop, Martin Hanek, Jan Karel, Josef Musil, Petr Svá ek Petr Svá ek (Gar.)		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

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2021025	Physics II.	Z,ZK	4
Faraday's law of ele	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic w	aves. Interaction
of radiation with ma	atter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a	and periodic syster	n of elements.
Spectra, x-rays, ;las	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	experiments related	to the lectures.
2011009	Mathematics III	Z,ZK	5
An introductory cou	urse in ordinary differential equation and infinite series.		
2311101	Mechanics I.	Z,ZK	4
Mechanics I deals	with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and thei	r systems with and	d without friction.
There are introduce	ed the methods of description of position and motion of particles and rigid bodies.		
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 ar	nd thermo-mechar	nical processing,
technical iron-carbo	on alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.		
2133013	Engineering Design III.	Z	2
Design of assembly	y unit (draft drawing, detail drawing, assembly drawing, technical report)		
2012035	Algorithmization and Programming Fundamentals	KZ	4
Programming in MA	ATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma	atrices, vectors and	d operations.
Writting M-script. Ir	put and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S	ystems of linear e	quations. Scripts
and functions. Stru	cture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. S	Structures. Algoritl	nmization of
simple programs: n	ninimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of	f 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 #

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 (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

Characteristics of the courses of this group of Study Plan: Code=12DSK4P-KMEN Name=00 2012 D kmenové 4. semestr STR kombinované								
2311102	Mechanics II.	Z,ZK	4					
Kinematics of point and	Kinematics of point and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, spherical motion, screw motion,							
general spatial motion. (Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and	vector method. Gr	aphical methods					
in kinematics. Basic the	ory 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. Numerical solution of ordinary differential								
equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.								
2133014	Engineering Design IV.	Z	2					

K331068 Technology I

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 #

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
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

Machine Elements and Mechanisms I. Joints and joining elements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, keys). Mechanical transmissions

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

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 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 pri	ciples for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	verification of me	easurement
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 Jaroslav Novák (Gar.)	Z,ZK	4	2P+06C+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

2371047 **Automatic Control** 7.7K 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

4

4

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 7.7K

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.

purposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be introduced.

Ζ

2381054 Management and Economics of the Enterprise

Z,ZK

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

2181026 Momentum, Mass and Heat Transfer

7 7K

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 Horeic Jan Horeic Jan Horeic (Gar.)	Z	2	1P+1C	*	PV

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

2383009 Communication and Dealing with People

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

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

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

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

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

Credits in the group: 2

Note on the group:

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

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

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

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

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

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

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

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

Credits in the group: 2

Note on the group:

Student si vybere předmět příslušný oboru, který studuje

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

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

2372091	Project	KZ	2			
An individual project fro	An individual project from the branch of specialisation, which student will study on his/her magister level					
2362091	Project	KZ	2			
2152091	Deparmental Project	KZ	2			
2182091	Project	KZ	2			
Absolvent se seznámí s	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	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	Z	4						
2363091	Z	4						
2373091	Project presentation	Z	4					
Diploma thesis or bach	Diploma thesis or bachelor work presentation. Student should study the presentation software possibilities and proposition of the department. Student should prepare the presentation							
of actual version of his	diploma or bachelor work and present it in the face of the other student. The presentation will continue with discussion. Consi	equently, the work	should be					
presented as a pdf file	on a temporal web page.							
2183091	Project Presentation	Z	4					
Preparation and preser	Preparation and presentation of a given project theme.							

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

Name of the group: 14 2012 BSTR 8.sem 1povvol IAT-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:

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
2363985	Bachelor Thesis	Z	5	0P+6C		PV
2373985	Bachelor Thesis	Z	5	0P+6C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BS*8Q-IAT-BP Name=14 2012 BSTR 8.sem 1povvol IAT-BP

2363985	Bachelor Thesis	Z	5
2373985	Bachelor Thesis	Z	5
Each student will solve	his individual theme under guiding of his individual supervising department specialist. Result is his/her bachelor thesis.	•	

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 jnženýrství.

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 voliteIné pro STR							
202A041	Physics I.				ZK	3	
Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic properties of bodies. Oscillations,							

waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors, insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression, measurements of 11 various experiments related to the lectures. 202A025 Physics II.A

Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves. Interaction of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements.

Specifa, x-rays, ,laser. i	band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	xperiments relate	d to the lectures.
201A021	Constructive Geometry A	ZK	3
The subject is focused			
201A056	Mathematics I.A	ZK	4
Introduction to linear al			
201A062	Mathematics II.A	ZK	4
10			

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-Ostrogradskii 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

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

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

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

Michaela Schusová Ilona Šimice (Gar.)

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

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2046155	English Conversation Ilona Šimice, Michele Le Blanc Ilona Šimice Michele Le Blanc (Gar.)	Z	2	0P+2C	*	V
2046156	English Conversation Ilona Šimice, Michele Le Blanc	Z	2	0P+2C	L	V
2046071	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	L	V
2046070	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	Z	V

2046074	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová,		2	0P+2C	Z	V
	Michele Le Blanc Michaela Schusová Ilona Šimice (Gar.)					
2046075	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046072	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046073	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046068	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046069	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046126	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046125	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046118	Czech -Advanced Jaroslava Kommová	Z	2	0P+2C	L	V
2046117	Czech -Advanced Jaroslava Kommová	Z	2	0P+2C	Z	V
2046127	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046128	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046119	Czech Language for Beginners I. Jaroslava Kommová	Z	2	0P+2C	Z	V
2046120	Czech Language for Beginners II. Jaroslava Kommová	Z	2	0P+2C	L	V
2046086	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046087	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046091	French - Advanced Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	٧
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	٧
2046089	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	٧
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	٧
2046079	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046083	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046082	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046081	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V

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

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

kurzy a prezentac	9		
2046155	English Conversation	Z	2
Improving communication	ve skills in speaking on general topics and general technical topics.	'	'
2046156	English Conversation	Z	2
Improving communication	ve skills in speaking on general topics and general technical topics.		'
2046071	English - Lower Intermediate	Z	2
	n European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which nd speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvem		
		ent of professions	o ariguage.
2046070	English - Lower Intermediate		
_	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language. A1 - A2.	m. writing in a sir	npie way about
2046074	English - Advanced	Z	2
The aim: comprehensio	n of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writ	ten and oral skills	on advanced
level. Ability to write a s	ummary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's fie	ld 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	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 comprel	nension of popula	r-scientific and
scientific articles or text	s from student's field of studies without difficulties. Grammar structures on advanced level.		

The aim is to seame language stills said you consideration professional English operation of control or even policy in a starboid at extra during front time, and memoriate look filterating garners involving a starboid at extra dispersion of personal professional design of the Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English and Security (and the April 2014) of the April 2014 Common English (and the April 2014) of the April 2014 Common English (and the April 2014) of the April 2014 Common English (and the April 2014) of the April 2014 Common English (and the April 2014) of the April 2014 Common English (and the April 2014) of the April 2014 Common English (and the A	2046072	English - Upper Intermediate	Z	2
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	2046078		_	l
anniai topics. reading and complehension of simple texts. improvement of professional language.	_		em. Writing in a sir	nple way about
	iaitillai topics. Reading	and comprehension of simple texts. Improvement of professional language.		

2046079 Mapped to the level of	Cormon Lower Intermediate Course		
Mapped to the level of	German - Lower Intermediate Course	Z	2
or in his/her free time a	Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme		
2046083	German - Advanced Course	Z	2
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in	. – .	· -
and active participation	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compre	ehension of popula	r-scientific and
scientific articles or tex	ts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046082	German - Advanced Course	Z	2
Comprehension of spo	ken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participat	ion in discussions.	Expressing
opinions. Written skills.	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te	echnical articles.	
2046081	German - Upper Intermediate Course	Z	2
	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students c		
-	Ilking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa	anding general and	
2046080	German - Upper Intermediate Course	L L	2
-	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili one´s opinions and plans. Reading and understanding general and technical texts.	ity to describe expe	enences and
2046076	German - Beginners	7	2
	poerman - beginners cryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	. – .	۷
2046077	German - Beginners	7	2
	mmon European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding	. – .	
	nology (professional language).		•
2046161	Presentations in English	Z	2
Preparing students to	present in English on technical topics, with a possible co-operation with specialized departments.	'	
2046166	Presentations in Czech	Z	2
Preparing students to	ive presentations in English on technical topics, with a possible co-operation with specialized departments.		
2046162	Presentations in German	Z	2
Preparation for present	ing technical topics in German, possibly in cooperation with specialized departments.		
2046164	Presentations in Russian	Z	2
· ·	ing technical topics in Russian, possibly in cooperation with specialized departments.		
2046163	Presentations in French language	Z	2
	ing technical topics in French, possibly in cooperation with specialized departments.		
2046165	Presentations in Spanish	Z	2
	ing technical topics in Spanish, possibly in cooperation with specialized departments.		
2046137	Russian - Lower Intermediate Course	Z	2
	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wr mprehension of simple texts. Improvement of professional language.	iting in a simple wa	ay about tamilla
		7	2
2046138	Russian - Lower Intermediate Course	Z udent meets at sch	2 ool or in his/he
2046138 Mapped to the level of	Russian - Lower Intermediate Course Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stu	udent meets at sch	· -
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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 relative.	Z,ZK	6
2011049	Numerical Mathematics	Z,ZK	4
Numerical solution	of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Numerical	solution of ordinar	y differentia
	equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference	1	
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		
	v 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
-	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different		
of integrals to pola	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector Gauss-Ostrogradskij theorem.	n's theorem. A pote	ential vecto
2012035	Algorithmization and Programming Fundamentals	KZ	4
Writting M-script. Ir and functions. St	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matr aput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste cructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. Ses ininimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of	ems of linear equati tructures. Algorithm	ons. Script
2012037	Computer Graphics	KZ	3
2016007	Mathematics I Seminar	Z	2
201A009	Mathematics III.A	ZK	2
201A021	Constructive Geometry A	ZK	3
20171021	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relative	1	
201A049	Numerical Mathematics A	ZK	2
201A056	Mathematics I.A	ZK	4
2017000	Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable		
201A062	Mathematics II.A	ZK	4
of integrals to pola	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector Gauss-Ostrogradskij theorem.	n's theorem. A pote	ential vector
2021025	Physics II.	Z,ZK	4
Faraday's law of ele	ectromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of elec	ctromagnetic waves	. Interactio
	natter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	-	
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe		he lectures
waves. Fluid me	Physics I. namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic proceed and the proceedings of the proceedings. The proceedings of the proceedings of the proceedings of the particles of the particles, centre of mass. Rigid body. Continuum, elastic proceedings. The proceedings of the particles, conductivity, resistance. Cookies ic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements of 11 various experiments related to the lectures.	onductors, semicon	ductors,
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
Faraday's law of ele	ectromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic values.	I .	. Interactio
	natter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and		
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe	1	he lectures
202A041	Physics I.	ZK	3
waves. Fluid me	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 ic 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.	onductors, semicon	ductors,
2041061	English-Bachelor Exam	Z,ZK	2
Mapped to the Com	inmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ties, to take part in	discussions
2041062	German - 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		discussions
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		

2041063	French - Bachelor Exam /FME	Z,ZK	2
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ties, to take part in	discussions,
2041064	Spanish - 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 difficul to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ties, to take part in	discussions,
2041065	Russian - Bachelor Exam / FME	Z,ZK	2
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ties, to take part in	discussions,
2046068	English - Beginners	Z	2
	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (orofessional langua	
2046069	English - Beginners Innon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	Z a and use of basic	expressions
mapped to the con	of general scientific terminology (professional language).	y and use of basic	CAPICOGIONIO
2046070	English - Lower Intermediate	Z	2
Aim. Onderstandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	writing in a simple	e way about
2046071	English - Lower Intermediate	Z	2
	mmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improveme		
2046072	English - Upper Intermediate	Z	2
The aim is to extend	d language skills taking into consideration professional English and common professional terminology. Comprehension of standard En	• .	conversation
0040070	about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2	1	
2046073	English - Upper Intermediate mmon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli	Z ish and common p	2 rofessional
	ehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedi		
	knowledge.		
2046074	English - Advanced	Z	2
	ension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writte te a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's field		
level. Ability to Wil	Grammar structures on advanced level. B1 - B2.	or studies without	umcunes.
2046075	English - Advanced	Z	2
	ommon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in En		
and active particip	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and comprehen	nsion of popular-so	cientific and
	scientific articles or texts from student's field of studies without difficulties (Frammar structures on advanced level		
2046076	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. German - Beginners	7	2
2046076 Basic voca	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. German - Beginners bulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	Z rofessional langua	2 age)
Basic voca 2046077	German - Beginners bulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners	rofessional langua	ige)
Basic voca 2046077	German - Beginners bulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an	rofessional langua	ige)
Basic voca 2046077	German - Beginners bulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners	rofessional langua	ige)
Basic voca 2046077 Mapped to the leve	German - Beginners subulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (part of everyday life in a written and spoken form. Understanding an general scientific terminology (professional language). German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	rofessional langua Z d use of basic exp	ge) 2 pressions of
Basic voca 2046077 Mapped to the leve 2046078 Aim: Understandin	German - Beginners Ibulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an general scientific terminology (professional language). German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Torfessional languar Z duse of basic exp Z Writing in a simple	ge) 2 pressions of 2 e way about
Basic voca 2046077 Mapped to the leve 2046078 Aim: Understandin 2046079	German - Beginners abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (part of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (part of everyday life in a written and spoken form. Understanding an general scientific terminology (professional language). German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course	Torfessional languar Z duse of basic exp Z Writing in a simple Z	ge) 2 vressions of 2 e way about 2
Basic voca 2046077 Mapped to the leve 2046078 Aim: Understandin 2046079 Mapped to the leve	German - Beginners Ibulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an general scientific terminology (professional language). German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Torofessional languary Z duse of basic exp Z Writing in a simple Z student meets eith	ge) 2 pressions of 2 pressions advantage way about 2 pressions advantage way about
Basic voca 2046077 Mapped to the leve 2046078 Aim: Understandin 2046079 Mapped to the leve	German - Beginners Ibulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an general scientific terminology (professional language). German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course I of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a	Torofessional languary Z duse of basic exp Z Writing in a simple Z student meets eith	ge) 2 pressions of 2 pressions advantage way about 2 pressions advantage way about
Basic voca 2046077 Mapped to the leve 2046078 Aim: Understandin 2046079 Mapped to the leve or in his/her free 2046080	German - Beginners Ibulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p German - Beginners el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an general scientific terminology (professional language). German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. familiar topics. Reading and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course I of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement German - Upper Intermediate Course andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	Torofessional languary Z Indicate use of basic exp Z Writing in a simple Z Student meets either of professional languary	ge) 2 pressions of 2 pressions about 2 per way about 2 per at school anguage. 2
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2046096	Spanish - Beginners	Z	2	
Aim:Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	vvriting in a simple	way ar	oout
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046097	Spanish - Beginners	Z	2	2
Mapped to the Co	mmon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s	student meets at so	chool or	r in
his/her free tim	e and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	guage.	.
2046098	Spanish - Lower Intermediate	Z	2	2
Understanding clea	ly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	in a simple way al	out far	miliar
· ·	topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046099	Spanish - Lower Intermediate	Z		,
	of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer			
	d speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of			5/1161
2046117	Czech -Advanced	Z	2	
•	poken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	•	ng opin	ions.
Writte	n skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t	echnical articles.		
2046118	Czech -Advanced	Z	2	2
Mapped to the level	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Cze	ch without great diff	ficulties	s and
active participation	n in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	ion of popular-scie	ntific ar	nd
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.			
2046119	Czech Language for Beginners I.	Z	2	2
	oulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua		
2046120	Czech Language for Beginners II.	7	2	,
	non European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understandin	a and use of basic.		
mapped to the Com		J and use of basic t	express	510115
2242425	of general scientific terminology (professional language).			
2046125	Czech Lower Intermediate	Z	2	
Aim: Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way al	bout
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046126	Czech Lower Intermediate	Z	2	2
Aim: Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way al	bout
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046127	Czech - Upper Intermediate			
		Z		
Understanding sta	· ·	_	2 ences a	
Understanding sta	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	_		
-	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	to describe experie	ences a	and
2046128	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. Czech - Upper Intermediate	to describe experie	ences a	and 2
2046128 Mapped to the Com	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. Czech - Upper Intermediate mon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	to describe experience to describe experience Z	ences a	and 2 ional
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	Russian - Advanced evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to	•	
Communication wit	h native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	inderstanding texts	concerning
2046155	currant issues and popular scientific and technical articles. English Conversation	Z	2
2040133	Improving communicative skills in speaking on general topics and general technical topics.	_	2
2046156	English Conversation Improving communicative skills in speaking on general topics and general technical topics.	Z	2
2046161	Presentations in English Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.	Z	2
2046162	Presentations in German Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.	Z	2
2046163	Presentations in French language Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.	Z	2
2046164	Presentations in Russian Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.	Z	2
2046165	Presentations in Spanish Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.	Z	2
2046166	Presentations in Czech Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departments.	Z ents.	2
2131002	Engineering Design II	Z,ZK	4
	PS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface ps, 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
Preliminary design,	design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, and fittings.	pipelines and their	accessories
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
	lements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, ke		
	on, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded Id key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple asser	•	
presseu, spiirieu ai	seminar work.	ilbiy dilits is also iir	uisperisable
2133013	Engineering Design III.	Z	2
	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)	ı	l
2133014	Engineering Design IV.	Z	2
2133025	Design	Z	4
	, design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coupl		
2141006	Embedded systems	Z,ZK	4
	procomputers history. Block diagram of computer. Busses, processors, memories, input and output circuits. Single chip microcompute Ie, assembler, ANSY-C language. Software and hardware tools for application developing. Simulator, emulator, logical analyzer. Com		
	utput. Analogous signal discretization, methods and errors of D/A and A/D conversion. Standard analogous signal. Interrupt system.		
a.g.tapat aa o	8051/52 microcomputer family.	. radiidai labo are .	
2141504	Electric Circuits and Electronics	Z,ZK	4
Introduction into the	neory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of	energy. El. Power a	nd Energy.
Introduction into	electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilize		erational
24.44.505	amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro		4
2141505	Electrical machines and drives ctrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transl	Z,ZK	4
	mer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-		
control. Synchronol	us machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque character Low-voltage distribution system.	ristic. Low-voltage i	nstruments.
2141519	Electrical Measurement and Diagnostics	Z,ZK	4
	mission of signals in measure systems. Electromagnetic compatibility. Electronics measurements circuits and a conversion of signal		
2144062	Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia	Z,ZK	3
2146060	Indonesian Language Course for Exchange Basic of Indonesian Language for Student Exchange Program to Indonesia	Z	2
2146061	Technical Indonesian - Course I.	Z	2
2152091	Second part of Indonesian Language for Student Exchange Program to Indonesia	KZ	2
2153005	Deparmental Project Fundamentals of Energy Conversions	Z	1
2153003	Presentation of Project	Z	4
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanica	1	_
	continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and the systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2182019	Chemistry	KZ	3
	y from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties	I	
phase equilibrium	n, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and bioche	mistry. Laboratory	practice is
	oriented upon the material properties measurement.		

2182091	Project	KZ	2
2102091	Project Absolvent se seznámí se základy oboru Procesní technika.	NΔ	2
2183091	Project Presentation Preparation and presentation of a given project theme.	Z	4
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 sys	tems with and wit	hout friction.
0011100	There are introduced the methods of description of position and motion of particles and rigid bodies.	7 714	
2311102	Mechanics II.	Z,ZK	4
	t and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, sp tion. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vectr		
general spatial mo	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechan	-	carmetrious
2321039	Materials Science II.	Z,ZK	4
	netallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materia	ermo-mechanical	processing,
2322029	Materials Science I.	KZ	3
	sent state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, deform		_
fracture of mat	terials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, iron	n-carbon phase	diagram.
2361005	Instrumental Technology This subject gives students a detail review of technology used for instrumentation production.	Z,ZK	4
2361097	Design of Instruments	Z,ZK	5
2001007	Basics of instruments design.	2,210	0
2362091	Project	KZ	2
2362502	Technical optics	KZ	3
	a thorough interpretation of the principle of image forming by planar and spherical surfaces under the laws of geometric optics. It also d colour aberrations and basic visual instruments.		romatic and
2362503	Applied Optics	KZ	4
	The course introduces students to the functions of basic optical instruments and shows their applications.		
2363091	Project Presentation	Z	4
2363985	Bachelor Thesis	Z	5
2371047	Automatic Control	Z,ZK	5
	llers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automatic	-	•
like transfer function	ons, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentrat	es on logic contro	I and control
	ole logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained.		
via programmab	ole 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.	Students begin to	work with
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via programmab 2371126 Logic control, Theo type sof PLC and	ole logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. S MATLAB software as a common platform of control engineers. Programmable Controller Applications Dry of finite automaton - introduction, Petri nets -application for industrial processes control. Programmable Logic Controller (PLC), PLCs	Z,ZK in distributed congram mand comm	work with 4 trol systems, munication
via programmab 2371126 Logic control, Theo type sof PLC an- model, common languages LD, IL	Dele logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where a common platform of control engineers. Programmable Controller Applications Programmable Controller Applications Programmable Logic Controller (PLC), PLCs deprivation are arranged in laboratories where a common platform of control engineers.	Z,ZK in distributed congram mand comragram (SFC), proems of PLCs, ne	4 trol systems, munication ogramming tworking of
via programmab 2371126 Logic control, Theo type sof PLC an- model, common languages LD, IL	Dele logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories where practical skills and control engineering methods are trained. Seminaries are arranged in laboratories while and control engineers. Seminaries are trained. Seminaries are arranged in laboratories while and control engineers. Seminaries are trained. Seminaries are arranged in laboratories while and control engineers. Seminaries are trained. Seminaries are arranged in laboratories while and control engineers. Seminaries are trained. Seminaries ar	Z,ZK in distributed congram mand comragram (SFC), proems of PLCs, ne	4 trol systems, munication ogramming tworking of
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2381054	Management and Economics of the Enterprise	Z,ZK	4
The subject is inten	ded to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonin	g and to help them	understand
the basic relations	hips between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audien	ce to be able to co	mmunicate
with economists in	n organizations. every product or service is valued at a selling price and therefore it is necessary to understand the simple costing of	products and serv	ices. Every
technician will enco	ounter reports and should understand the basic structure of financial statements. As a future manager, he will compile and approve th	e operating budge	t. In the field
of management,	hey will learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project mana	gement. For decisi	on-making
ı	ourposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be	introduced.	
2383001	Fundamentals of Law	Z	2
Basic orientation in	n legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provide	le a view into the C	zech Legal
Order, particular se	ources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is n	ecessary for stude	nts to know
our legal institution	ns, 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 k	now some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relation	ships and to make	them ready
	to prepare professional presentations and to understand basic structures between law and engineering		
2383009	Communication and Dealing with People	Z	2
Human communic	ation 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
Foundry properties	of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form	ning processes. Se	mi-products,
	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatmen	t.	
K333038	Fundamentals of Technology I.	Z	3
Production proces	ses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, techr	nical metals. Produ	ction of pig
iron and steel. Ca	sting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tech	nnology. Hot and co	old forging.
Free and drop for	orging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of weld	ding. Fusion weldir	ıg: Flame
	welding and arc welding with coated electrodes. Thermal cutting.		
K341014	Technology II.	Z,ZK	5
			

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