Study plan

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

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

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

Required credits: 96

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

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

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 49

The role of the block: P

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

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

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

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

Credits in the group: 22 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2351110	Modeling and simulation I.	Z,ZK	5	2P+2C+0L	*	Р
2211581	Transmissions	Z,ZK	5	2P+2C	*	Р
2311073	Simulation of Mechanical Systems	Z,ZK	6	2P+3C	*	Р

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

Onaraotoriotico o	naractorionics of the courses of this group of citacy Flam. Course Fig. 1. That Flame - 12 2012 Both Flooring of this fit is						
2351110	Modeling and simulation I.	Z,ZK	5				
The subject is focused	The subject is focused on explanation of the design of machine tool axis by individual parts and components.						
2211581	Transmissions	Z,ZK	5				
The course provides a	general summary of transmissions for various applications which the student in the specialization designer-calculator meets.	The gearing basic	s of production				
and transport machines	and transport machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission devices of motor vehicles.						
2311073	Simulation of Mechanical Systems	Z,ZK	6				

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

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

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

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

Credits in the group: 4 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2112092	Department Project	KZ	4	0P+6C	*	Р
2122092	Department Project	KZ	4	0P+6C	*	Р
2352092	Specialization Project	KZ	4	0P+6C+0L	*	Р
2212092	Project	KZ	4	0P+4C	Z	Р
2312092	Department project Michael Valášek	KZ	4	0P+6C	*	Р

2132092	Project František Lopot	KZ	4	0P+6C	*	Р
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Characteristics of the courses of this group of Study Plan: Code=12BS*7Q-KPP-OP Name=13 2012 BSTR 7.sem 1povvol KPP-OP

2112092	Department Project	KZ	4				
2122092	KZ	4					
The content of the subj	2122092 Department Project						
2352092	Specialization Project	KZ	4				
The course is focused of	The course is focused on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student will get acquainted with the problems						

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

2212092 Project
Basic practical skills of work with advanced CAD/CAE/CAM systems. Project training in solution of design task based on industry requirements.

2312092 Department project
Individual asignment

2132092 Project

KZ 4

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

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

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

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

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

Credits in the group: 23 Note on the group:

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

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

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

Code of the group: 12DSK1P-KMEN

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

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

Credits in the group: 0

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

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Jan Sko ilas, Adam Krupica, Filip Randák Radek Šulc Radek Šulc (Gar.)	KZ	3	2P+1C	1	Р
2011021	Constructive Geometry	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

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

2011021 Constructive Geometry

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

2011056 Mathematics I

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

KZ 3

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.

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	KZ	3	2P+1L	2	Р
2012037	Computer Graphics	KZ	3	1P+1C	*	Р
2131002	Engineering Design II	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.

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 #

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 Stanislav Kra mar	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. Ji í Cejp, Jakub Horník, Jana Sobotová, Elena ižmárová, Eliška Gal íková, Pavlína Hájková, Jakub Horváth, Stanislav Krum, Vladimír Mára, Jana Sobotová Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2133013	Engineering Design III. Št pán Tichý, Jan Hoidekr, Jan Kanaval, František Lopot, David Skalický, Roman Uhlí Jan Kanaval Jan Kanaval (Gar.)	Z	2	0P+2C	Z	Р
2012035	Algorithmization and Programming Fundamentals Petr Svá ek	KZ	4	1P+2C	*	Р

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 wa	ves. Interactio
of radiation with ma	atter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a	nd periodic system	of elements.
Spectra, x-rays, ;la	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	operiments related	to the lectures
2011009	Mathematics III	Z,ZK	5
An introductory co	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 their	systems with and	without friction
There are introduc	ed the methods of description of position and motion of particles and rigid bodies.		
2321039	Materials Science II.	Z,ZK	4
Fundamentals of n	letallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal an	d thermo-mechani	cal processing
technical iron-carb	on alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.		
2133013	Engineering Design III.	Z	2
Design of assembl	y unit (draft drawing, detail drawing, assembly drawing, technical report)	·	
2012035	Algorithmization and Programming Fundamentals	KZ	4
orogramming in M	ATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma	trices, vectors and	operations.
Nritting M-script. In	put and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Sy	stems of linear equ	uations. Scrip
and functions. Stru	cture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. \$	structures. Algorithr	mization of

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. Václav Bauma	Z,ZK	4	2P+2C	*	Р
2011049	Numerical Mathematics Petr Svá ek	Z,ZK	4	2P+2C	4	Р
2133014	Engineering Design IV. František Lopot	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

2311102	Mechanics II.	Z,ZK	4			
Kinematics of point and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, spherical motion, screw motion,						
general spatial motion	general spatial motion. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vector method. Graphical methods					
in kinematics. Basic th	eory 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						
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equations, initial and b	oundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.		amary amoronia			

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	Z	2	1P+1C	*	Р

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

2131512 Machine Elements and Mechanisms I.	Z,ZK	6
Joints and joining elements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, I	keys). Mechanic	al transmissions
(belt, chain, friction, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded	connecting bolt	s, clamped,
pressed, splined and key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple asse	embly units is als	so indispensable
seminar work.		

2141504	Electric Circuits and Electronics
Z T JUT	Lieunic Oncurs and Lieunomics

Z,ZK

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 prin	ciples for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	verification of me	asurement
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 #

11010 011 1110	<u> </u>					
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	Z,ZK	5	3P+15C+05L	*	Р
2131026	Machine Elements and Mechanisms II František Lopot	ZK	3	3P+0C	*	Р
2141505	Electrical machines and drives Jaroslav Novák	Z,ZK	4	2P+06C+14L	*	Р
2133025	Design František Lopot	Z	4	0P+4C	*	Р
2381054	Management and Economics of the Enterprise	Z,ZK	4	2P+2C	*	Р

2181026 Z,ZK 3P+1C Momentum, Mass and Heat Transfer

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** 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.

Machine Elements and Mechanisms II Preliminary design, design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism, pipelines and their accessories

and fittings. 2141505 Electrical machines and drives

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

2133025 Design Design, design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft couplings and clutches 2381054 Management and Economics of the Enterprise 4

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

Momentum, Mass and Heat Transfer

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	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 Dušana Jirovská Eliška Vítková Dušana Jirovská (Gar.)	Z,ZK	2	0P+2C	*	PV
2041062	German - Bachelor Exam / FME Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z,ZK	2	0P+2C	*	PV
2041065	Russian - Bachelor Exam / FME Hana Volejníková, Dušana Jirovská Eliška Vítková Dušana Jirovská (Gar.)	Z,ZK	2	0P+2C	*	PV
2041064	Spanish - Bachelor Exam / FME 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

011X & 1210						
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 diffi	iculties, to take pa	rt in discussions,			
to write a summary, a re	o write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.					
2041063	French - Bachelor Exam /FME	Z,ZK	2			
Mapped to the Common	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	iculties, to take pa	rt in discussions,			
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041062	German - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Common	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	iculties, to take pa	rt in discussions,			
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041065	Russian - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Common	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	iculties, to take pa	rt in discussions,			
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions,						
to write a summary, a re	write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.					

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

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

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

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

Credits in the group: 2

Note on the group:

Student si vybere předmět příslušný oboru, který studuje

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

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

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

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

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

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

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

Credits in the group: 4

Note on the group:

2363091 nesepsán Student si vybere předmět příslušný oboru, který studuje

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

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

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

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

Preparation and presentation of a given project theme.

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

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

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

Credits in the group: 5 Note on the group:

Name of the block: Elective courses

Minimal number of credits of the block: 32

The role of the block: V

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

Name of the group: 02 2012 ALFA volitelné pro STR

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

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

Credits in the group: 32

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

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
202A041	Physics I.	ZK	3	0P+0L	*	V
202A025	Physics II.A	ZK	2	0P+0C	*	V
201A021	Constructive Geometry A	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 dynam	ics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic	properties of boo	lies. Oscillations,		
waves. Fluid mechanic	s. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	nductors, semico	nductors,		
insulators. Magnetic fie	ld. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and inc	direct measureme	nts, regression,		
measurements of 11 va	arious experiments related to the lectures.				
202A025	Physics II.A	ZK	2		
Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves. Interaction					
of radiation with matter. Photoelectric effect Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements					

Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures.

201A021	Constructive Geometry A	ZK	3		
The subject is focused	on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.				
201A056	Mathematics I.A	ZK	4		
Introduction to linear a	gebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable				
201A062	Mathematics II.A	ZK	4		
Open and closed set, I	oundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differentiability.	ential operators div	v (divergence)		
and curl (rotation). Fund	ction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ	ıral, Fubini theoren	n. Transformation		
of integrals to polar, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green's theorem. A potential vector					
field, independence of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector field through a surface. The					
Gauss-Ostrogradskij th	eorem.				

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

Mathematics III.A

Name of the group: 05 2012 doporu ené seminá e

Numerical Mathematics A

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

Credits in the group: 0

201A009

201A049

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

ZK

ZK

2

(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, Lud k Beneš, Hynek ezní ek, Olga Majlingová Radka Keslerová Gejza Dohnal (Gar.)	Z	2	0P+2C	1	V

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

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

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

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

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

Credits in the group: 0 Note on the group:

Note on the group	J					
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 Michele Le Blanc	Z	2	0P+2C	L	V
2046071	English - Lower Intermediate Veronika Kratochvílová	Z	2	0P+2C	L	V
2046070	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046074	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michaele Le Blanc Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michael 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 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	Z	2	0P+2C	L	V
2046126	Veronika Kratochvilová Ilona Šimice Czech Lower Intermediate	 	2	0P+2C		
	Jaroslava Kommová Czech Lower Intermediate				L	V
2046125	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 Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046091	French - Advanced	Z	2	0P+2C	L	V
2046090	Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.) French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate	Z	2	0P+2C	L	V
2046088	Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.) 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 Dušana Jirovská Michaela Schusová Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2146060	Indonesian Language Course for Exchange	Z	2	0P+2C	*	V
2146061	Technical Indonesian - Course I.	Z	2	0P+2C	Z	V
2144062	Technical Indonesian - Course II.	Z,ZK	3	1P+2C	L	V
2046078	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046079	German - Lower Intermediate Course Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046083	German - Advanced Course 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 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 Jaroslava Kommová, 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
	1			+	-	-
2046164	Presentations in Russian 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 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 Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046140	Russian - Upper Intermediate 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 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 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 Jaime Andrés Villagómez Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V

Characteristics of the courses of this group of Study Plan: Code=12B**1V-DOP ZJK Name=06 2012 doporu ené základní jazykové kurzy a prezentace 2046155 English Conversation Z 2

2046155	English Conversation		2
Improving communi	iicative skills in speaking on general topics and general technical topics.	,	,
2046156	English Conversation	Z	2
Improving communi	icative skills in speaking on general topics and general technical topics.	'	•
2046071	English - Lower Intermediate	Z	2
Mapped to the Com	nmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations v	which a student meets	either at schoo
or at his/her free tim	me and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Impre	ovement of profession	al language.
2046070	English - Lower Intermediate	Z	2
Aim: Understanding	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking abou	ut them. Writing in a si	imple way abou
amiliar topics. Read	ding and comprehension of simple texts. Improvement of professional language. A1 - A2.		
2046074	English - Advanced	Z	2
The aim: compreher	ension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion	. Written and oral skills	s on advanced
evel. Ability to write	e a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student	t's field of studies with	out difficulties.
Grammar structures	s on advanced level. B1 - B2.		
2046075	English - Advanced	Z	2
			reat difficulties
Mapped to the Com	nmon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures give	en in English without gi	eat unitcuttes
• •	nmon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures give ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and coi		
and active participat	· · · · · · · · · · · · · · · · · · ·		
and active participat	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and col		
and active participat scientific articles or 2046072	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and correxts from student's field of studies without difficulties. Grammar structures on advanced level.	mprehension of popul	ar-scientific and
and active participat scientific articles or 2046072 The aim is to extend	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and corrected from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate	mprehension of popul	ar-scientific and
and active participat scientific articles or 2046072 The aim is to extend	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contexts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of states.	mprehension of popul	ar-scientific and
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contexts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of starryday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1.	mprehension of popul	ar-scientific and 2 and conversation 2
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Com	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contracts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of starryday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1. English - Upper Intermediate	mprehension of populi Z ndard English speech Z al English and commo	ar-scientific and 2 and conversation 2 on professional
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Com	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contribute from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of starryday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1. English - Upper Intermediate mon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration profession	mprehension of populi Z ndard English speech Z al English and commo	ar-scientific and 2 and conversation 2 on professional
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Comperminology, Compreknowledge.	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contribute texts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of starryday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1. English - Upper Intermediate Intermediate Intermediate level B1. The aim is to extend language skills taking into consideration profession rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate level.	mprehension of populi Z ndard English speech Z al English and commo	ar-scientific and 2 and conversation 2 on professional
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Comperminology, Compressional Scientific Scienti	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contribute from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of starryday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1. English - Upper Intermediate mon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration profession	mprehension of populi Z ndard English speech Z al English and commontermediate level. Bros	2 and conversation professional adening gramm
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Comparison of the Com	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contribute texts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate Intermediate	mprehension of populi Z ndard English speech Z al English and commontermediate level. Bros	2 and conversation professional adening gramm
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Compression of the complete of the compression of the complete of the compression of the compression of the complete of the compression of the	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contribute texts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate Intermediate Intermediate Intermediate Intermediate Intermediate Intermediate Intermediate	mprehension of popular Z ndard English speech Z all English and common ntermediate level. Broad September 2 ggy (professional languar Z	2 and conversation professional adening gramm 2 large). A1 2
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Compression of the complete scientific articles or extended about topics of ever 2046073 Mapped to the Compression of the complete scientific articles or extended about the complete scientific articles or extended articles or extended about the complete scientific articles or extended about th	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contributed freedom student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate	mprehension of popular Z ndard English speech Z all English and common ntermediate level. Broad September 2 ggy (professional languar Z	2 and conversation professional adening gramm 2 large). A1 2
and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Competency Compression (Competency Compression) 2046068 Aim: Basic vocabula 2046069 Mapped to the Competency Compression (Competency Competency Competenc	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contributed freedom student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate d language skills taking into consideration professional English and common professional terminology. Comprehension of startyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1. English - Upper Intermediate Inmon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration profession rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on in English - Beginners ary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology. English - Beginners Inmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding of everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding of everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form. Understanding everyday life in a written and spoken form.	mprehension of popular Z ndard English speech Z all English and common ntermediate level. Broad September 2 ggy (professional languar Z	ar-scientific and 2 and conversation 2 on professional adening gramm 2 lage). A1 2 oasic expression
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and active participal scientific articles or 2046072 The aim is to extend about topics of ever 2046073 Mapped to the Competerminology. Compression of the Competerminology of the Competerminology of the Competerminology of general scientific 2046126 Aim: Understanding familiar topics. Reac 2046125	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and contexts from student's field of studies without difficulties. Grammar structures on advanced level. English - Upper Intermediate	mprehension of popular Z ndard English speech Z all English and common ntermediate level. Broad September 2 agy (professional languary 2 arstanding and use of but them. Writing in a sign as in a sign and sign are sign as in a sign are	2 and conversation 2 and professional adening gramm 2 auage). A1 2 pasic expression 2 aumple way about 2

2046118 Czech -Advanced Manada to the level of Common Franciscular of Defended B1 B2 The circumstancian of cooling Creek on well as lectures given	Z	2					
Mapped to the level of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given i active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compreh	_						
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.							
2046117 Czech -Advanced Comprehension of spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation	Z	2					
Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical	•	ressing opinions.					
2046127 Czech - Upper Intermediate	Z	2					
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. A events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	bility to describe exp	periences and					
2046128 Czech - Upper Intermediate	Z	2					
Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration profession		-					
terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on in knowledge technical language.	termediate level. Bro	padening the					
2046119 Czech Language for Beginners I.	Z	2					
Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (pro							
2046120 Czech Language for Beginners II. Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Unders	Z tanding and use of b	asic expressions					
of general scientific terminology (professional language).							
2046086 French - Lower Intermediate Course	Z	2					
Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. topics. Reading and comprehension of simple texts. Improvement of professional language.	writing in a simple w	ay about familiar					
2046087 French - Lower Intermediate Course	Z	2					
Mapped to the level of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations wh							
his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improveme 2046091 French - Advanced	7	2					
Mapped to the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on	. –	I					
Communication with native speakers, participation 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 technical articles. 2046090 French - Advanced	7	2					
Comprehension of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participal	. –	_					
opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and							
2046089 French - Upper Intermediate Mapped to the level of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students	Z s comes across at w	ork. at school.					
during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and under							
2046088 French - Upper Intermediate	Z	2					
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. A events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	bility to describe exp	periences and					
2046084 French - Beginners	Z	2					
Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple w	ay about familiar					
topics. Reading and comprehension of simple texts. Improvement of professional language. 2046085 French - Beginners´ Course	Z	2					
Mapped to the level of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations wh	ich a student meets	at school or in					
his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improveme	1						
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					
Second part of Indonesian Language for Student Exchange Program to Indonesia	771						
2144062 Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia	Z,ZK	3					
2046078 German - Lower Intermediate Course	Z	2					
Aim: Understanding clearly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking	about them. Writing	in a simple way					
about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. 2046079 German - Lower Intermediate Course	Z	2					
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations w	1	l .					
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improve							
2046083 German - Advanced Course Mapped to the level of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given	Z n in German without	areat 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 com		_					
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.							
2046082 German - Advanced Course Comprehension of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participations of the student of t	Z	Expressing					
opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and		np. 000g					
2046081 German - Upper Intermediate Course	Z	2					
Mapped to the level of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a student during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and under							
2046080 German - Upper Intermediate Course	Z	2					
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. A	bility to describe exp	periences and					
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046076 German - Beginners	Z	2					
Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (pro	I .	l .					
the Common European Framework of Reference for Languages A1.							

2046077	German - Beginners	Z	2
Mapped to the level	Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understandin	ng and use of basic	expressions of
general scientific ter	minology (professional language).		
2046161	Presentations in English	Z	2
Preparing students t	o present in English on technical topics, with a possible co-operation with specialized departments.	,	
2046166	Presentations in Czech	Z	2
Preparing students t	o give presentations in English on technical topics, with a possible co-operation with specialized departments.	1	1
2046162	Presentations in German	Z	2
	enting technical topics in German, possibly in cooperation with specialized departments.	_	. –
2046164	Presentations in Russian	Z	2
	enting technical topics in Russian, possibly in cooperation with specialized departments.	_	_
2046163	Presentations in French language	Z	2
	enting technical topics in French, possibly in cooperation with specialized departments.	_	_
2046165	Presentations in Spanish	Z	2
	enting technical topics in Spanish, possibly in cooperation with specialized departments.		
2046137	Russian - Lower Intermediate Course	7	2
	Nussian - Lower intermediate Course y what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. V	_	_
_	comprehension of simple texts. Improvement of professional language.	viilling iii a siiripie v	vay about lamilla
2046138		Z	2
	Russian - Lower Intermediate Course of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which as	_	-
	or Common European Framework of Reference. Az Onderstanding clearly what is spoken about everyday situations which a single about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of pro		
2046141	Russian - Advanced	Z	2
comprenension of s	poken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participa	ation in discussions	s. Expressing
aniniana Mirittan aki	le. Ability to write an econy or a report. Deading and understanding toyte concerning surrent issues and natural eciantific and	tooknieel estielee	
	ls. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and		
2046142	Russian - Advanced	Z	2
2046142 Mapped to the level	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or	Z n topics familiar to t	he student.
2046142 Mapped to the level Communication with	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading	Z n topics familiar to t	he student.
2046142 Mapped to the level Communication with currant issues and p	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles.	Z n topics familiar to t and understanding	he student. texts concerning
2046142 Mapped to the level Communication with currant issues and p 2046140	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles. Russian - Upper Intermediate	Z n topics familiar to t and understanding	he student. texts concerning
2046142 Mapped to the level Communication with currant issues and p 2046140 Mapped to the level	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles. Russian - Upper Intermediate of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student	Z n topics familiar to t and understanding Z t meets at work, at	he student. texts concerning 2 school, during
2046142 Mapped to the level Communication with currant issues and p 2046140 Mapped to the level free time, and talking	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles. Russian - Upper Intermediate of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a studeng about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understanding standard speech about familiar matters that a studeng about these topics.	Z n topics familiar to t and understanding Z t meets at work, at standing general an	he student. texts concerning 2 school, during d technical texts
2046142 Mapped to the level Communication with currant issues and p 2046140 Mapped to the level free time, and talking	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles. Russian - Upper Intermediate of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student g about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and unders Russian - Upper Intermediate	Z n topics familiar to t and understanding Z t meets at work, at standing general an Z	he student. texts concerning 2 school, during d technical texts
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2046142 Mapped to the level Communication with currant issues and p 2046140 Mapped to the level ree time, and talking 2046139 Understanding stand	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles. Russian - Upper Intermediate of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student g about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and unders Russian - Upper Intermediate	Z n topics familiar to t and understanding Z t meets at work, at standing general an Z	texts concerning 2 school, during d technical texts 2 periences and
2046142 Mapped to the level Communication with currant issues and p 2046140 Mapped to the level ree time, and talking 2046139 Understanding stand events, briefly explain	Russian - Advanced of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian or native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading opular scientific and technical articles. Russian - Upper Intermediate of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student g about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and unders Russian - Upper Intermediate lard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ab	Z n topics familiar to t and understanding Z t meets at work, at standing general an Z	texts concerning 2 school, during d technical texts
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List of courses of this pass:

Code	Name of the course	Completion	Credits	
2011009	Mathematics III	Z,ZK	5	
	An introductory course in ordinary differential equation and infinite series.	•	"	
2011021	Constructive Geometry	Z,ZK	6	
The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.				
2011049	Numerical Mathematics	Z,ZK	4	
Numerical solution of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Numerical solution of ordinary differential				
	equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference method			

2011056 Mathematics I Z,ZK 8 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. 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. Algorithmization and Programming Fundamentals 2012035 K7 Programming in MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matrices, vectors and operations. Writting M-script. Input and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Systems of linear equations. Scripts and functions. Structure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. Structures. Algorithmization of simple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of systems of linear equations. 2012037 **Computer Graphics** 2016007 Mathematics I. - Seminar Ζ 2 201A009 Mathematics III.A ZK 2 201A021 Constructive Geometry A ZK 3 The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations 201A049 Numerical Mathematics A ZK 2 201A056 Mathematics I.A ZK 4 Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable 201A062 Mathematics II.A ZK 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. 2021025 Physics II. 7.7K 4 Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves. Interaction of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements. Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures. 2021041 Physics I. Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic properties of bodies. Oscillations, waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors, insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression, measurements of 11 various experiments related to the lectures. Ζ 2026016 Physics - Seminar 2 The subject is mainly meant for high-school students for repetition of high-school physics. 202A025 7K 2 Physics II.A Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic waves. Interaction of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements. Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures. Physics I. 2024041 7K 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. 2041061 English-Bachelor Exam 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. 2041062 German - Bachelor Exam / FME 7.7K 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 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. 2041064 Spanish - Bachelor Exam / FME 7.7K 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. 2041065 Russian - Bachelor Exam / FME 2 Z,ZK 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. Ζ 2046068 English - Beginners 2 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language). A1 2046069 English - Beginners Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language).

2046070 Aim: Understandin	English - Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Z Writing in a simple	2 way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.		-
2046071	English - Lower Intermediate	Z	2
	mmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a s 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 about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2		onversation
2046073	English - Upper Intermediate		2
	mmon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli		
terminology. Compi	rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedi knowledge.	ate level. Broadenii	ng grammar
2046074	English - Advanced	Z	2
The aim: compret	nension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Written	n and oral skills on	advanced
level. Ability to wri	te a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's field	of studies without	difficulties.
2040075	Grammar structures on advanced level. B1 - B2.	7	2
2046075	English - Advanced pmmon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in En	. – .	
	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay reading and comprehen		
, ,	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046076	German - Beginners	Z	2
Basic vocabulary o	f everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession the Common European Framework of Reference for Languages A1.	nal language) It cor	responds to
2046077	German - Beginners	7	2
	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).		
2046078	German - Lower Intermediate Course	Z	2
Aim: Understandin	g clearly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking about	them. Writing in a	simple way
	about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	_	
2046079	German - Lower Intermediate Course	Z	2
	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. Improvemen		
2046080	German - Upper Intermediate Course	7	2
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi	
on a on a chair a mig on	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	to doornoo oxponi	511000 a.i.a
2046081	German - Upper Intermediate Course	Z	2
Mapped to the lev	el of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com	nes across at work,	at school,
	nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandi	ng general and tec	hnical texts.
2046082	German - Advanced Course	Z	2
	of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participatio Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a		
2046083	German - Advanced Course	Z	2
	of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in G		
	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehe	-	
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046084	French - Beginners	Z	2
Understanding clea	Irrly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing topics. Reading and comprehension of simple texts. Improvement of professional language.	in a simple way at	oout familiar
2046085	French - Beginners' Course	Z	2
	el of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which a		
	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046086	French - Lower Intermediate Course	Z	2
Understanding clea	irly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	in a simple way at	oout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046087	French - Lower Intermediate Course	Z	. 2
	el of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046088	French - Upper Intermediate	7	2
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	_	
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046089	French - Upper Intermediate	Z	2
	el of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students com		
_	nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding		
2046090	French - Advanced	Z Z	2
•	of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participatior Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a		-
2046091	French - Advanced	Z	2
	FIGURE - Advanced evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to		
	h native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	•	
	currant issues and popular scientific and technical articles	=	_

2046096	Spanish - Beginners	Z	2
Aim:Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046097	Spanish - Beginners	Z	2
Mapped to the C	common European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a	student meets at so	chool or in
his/her free tir	me and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	
2046098	Spanish - Lower Intermediate	Z	2
Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	g in a simple way at	oout familiar
0040000	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046099	Spanish - Lower Intermediate el of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer	Z Z	2
1 ' '	er of Common European Framework of Reference A2 onderstanding clearly what is spoken about everyday stituations which a studen and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of		
2046117	Czech -Advanced	7	2
	spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	cussions. Expressi	
I	ten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t	· ·	3 1 1 1
2046118	Czech -Advanced	Z	2
Mapped to the leve	el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec	ch without great dif	ficulties and
active participat	ion in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	sion of popular-scie	ntific and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046119	Czech Language for Beginners I.	Z	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Co	mmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	g and use of basic	expressions
0040405	of general scientific terminology (professional language).		
2046125	Czech Lower Intermediate	Writing in a simple	2
Aim: Understandi	ng 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.	writing in a simple	way about
2046126	Czech Lower Intermediate	7	2
	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	
, ondorotana.	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		may about
2046127	Czech - Upper Intermediate	Z	2
	tandard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	ences and
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046128	Czech - Upper Intermediate	Z	2
Mapped to the Co	mmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	ech and common p	orofessional
terminology. Cor	mprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm	nediate level. Broad	lening the
0040405	knowledge technical language.	_	
2046135	Russian - Beginners	<u> </u>	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p		-
2046136	Russian - Beginners vel of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	Z Z	2
iviapped to trie lev	of general scientific terminology (professional language)	and use of basic e	xpressions
2046137	Russian - Lower Intermediate Course	Z	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	1	
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046138	Russian - Lower Intermediate Course	Z	2
Mapped to the leve	el of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stude	nt meets at school	or in his/her
free time a	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	professional langua	ige.
2046139	Russian - Upper Intermediate	Z	2
Understanding s	tandard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	ences and
0040440	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046140	Russian - Upper Intermediate	Z	2
1	vel of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me ing about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understandi		- 1
2046141	Russian - Advanced	Z	2
	of spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation		
1	Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific:		1
2046142	Russian - Advanced	Z	2
	level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to	ppics familiar to the	
Communication w	ith native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	ınderstanding texts	concerning
	currant issues and popular scientific and technical articles.	1	
2046155	English Conversation	Z	2
	Improving communicative skills in speaking on general topics and general technical topics.		
2046156	English Conversation	Z	2
0010101	Improving communicative skills in speaking on general topics and general technical topics.		
2046161	Presentations in English	Z	2
	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.		
2040400		7	
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	2
2112092	Department Project	KZ	4
2122092	Department Project	KZ	4
	he content of the subject is given by the topic of bachelor's work after consultion with supervisor of bachelor work or the tutor of the		·
2131002	Engineering Design II	Z,ZK	4
	GPS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface		al tolerance,
dimensional loc	pps, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	r knowledge from	ectures.
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, pand fittings.	pipelines and their	accessories
2131120	Design of Steel Structures	Z,ZK	6
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
, ,	elements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, ke	• •	
	ion, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded		
	nd key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assem seminar work.		
2132092	Project	KZ	4
	mester global project of mechanical drive of conveyor composed of electric motor, elastic shaft coupling (respectively V-belt drive), ge	-	
""	d compensating double-row toothed shaft coupling (respectively roller chain drive). Second, alternative arrangement of projected mecha	•	
1 .	x and additional mechanical drives by means of only one single-stage warm gearbox Elaboration of 4 additional reports analysing prod Ichine element (gearbox shaft or gear). Besides project of mechanical drive must be elaborated design project of crank mechanism ar		
or assigned ma	single-cylinder piston engine.	id its flywrider for a	issigned
2133013	Engineering Design III. Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)	Z	2
2133014	Engineering Design IV.	Z	2
			4
2133025	Design n, design calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coupli	ngs and clutches	4
2141504	Electric Circuits and Electronics	Z,ZK	4
	heory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of e	,	
	electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilized	• •	٠,
	amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprocessing.	cessor.	
2141505	Electrical machines and drives	Z,ZK	4
	ectrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transf		
	mer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-		
control. Synchrono	us machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque character	istic. Low-voltage i	nstruments.
24.44062	Low-voltage distribution system.	7 71/	
2144062	Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia	Z,ZK	3
2146060	Indonesian Language Course for Exchange	Z	2
2140000	Basic of Indonesian Language for Student Exchange Program to Indonesia	_	_
2146061	Technical Indonesian - Course I.	Z	2
2110001	Second part of Indonesian Language for Student Exchange Program to Indonesia	_	-
2152091	Deparmental Project	KZ	2
2153005	Fundamentals of Energy Conversions	Z	1
2153091	Presentation of Project	Z	4
2181026	·		
	Momentum Mace and Heat Transfer		
	Momentum, Mass and Heat Transfer transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical	Z,ZK	5
	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical	Z,ZK energy equation.	5 Residence
	,	Z,ZK energy equation.	5 Residence
2182019	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical of continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and there	Z,ZK energy equation.	5 Residence
2182019	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical a continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.	Z,ZK energy equation. I mal radiation. Mult	5 Residence icomponent
2182019 General chemistr	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties not chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochem	Z,ZK energy equation. I mal radiation. Mult KZ of matter, thermo	5 Residence icomponent 3 dynamics,
2182019 General chemistr phase equilibriun	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and there systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties not chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemical reactions.	Z,ZK energy equation. mal radiation. Mult KZ of matter, thermonistry. Laboratory	5 Residence icomponent 3 dynamics, practice is
2182019 General chemistr	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties not chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochem	Z,ZK energy equation. I mal radiation. Mult KZ of matter, thermo	5 Residence icomponent 3 dynamics,
2182019 General chemistr phase equilibrium 2182091	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties in, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemoriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika.	Z,ZK energy equation. mal radiation. Mult KZ of matter, thermonistry. Laboratory	5 Residence icomponent 3 dynamics, practice is
2182019 General chemistr phase equilibriun	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties not not necessary), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemical reactions. Project	Z,ZK energy equation. mal radiation. Mult KZ of matter, thermonistry. Laboratory	5 Residence icomponent 3 dynamics, practice is
2182019 General chemistri phase equilibrium 2182091 2183091	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and there systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties mentical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher oriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika. Project Presentation Preparation and presentation of a given project theme.	Z,ZK energy equation. mal radiation. Mult KZ of matter, thermomistry. Laboratory	5 Residence icomponent 3 dynamics, practice is 2
2182019 General chemistri phase equilibrium 2182091 2183091 2211581	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties in, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher oriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika. Project Presentation	Z,ZK energy equation. Mult KZ of matter, thermomistry. Laboratory KZ Z	5 Residence icomponent 3 dynamics, practice is 2 4
2182019 General chemistri phase equilibrium 2182091 2183091 2211581 The course provid	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties in, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher oriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika. Project Presentation Preparation and presentation of a given project theme. Transmissions	Z,ZK energy equation. Mult KZ of matter, thermomistry. Laboratory KZ Z Z,ZK e gearing basics of	5 Residence icomponent 3 dynamics, practice is 2 4 5 production
2182019 General chemistri phase equilibrium 2182091 2183091 2211581 The course provid	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical in continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and their systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry In the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties in the course in the course in the point of view of mechanical and process engineering. Physical chemistry (hydrocarbons, polymers) and biochem oriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika. Project Presentation Preparation and presentation of a given project theme. Transmissions es a general summary of transmissions for various applications which the student in the specialization designer-calculator meets. The	Z,ZK energy equation. Mult KZ of matter, thermomistry. Laboratory KZ Z Z,ZK e gearing basics of	5 Residence icomponent 3 dynamics, practice is 2 4 5 production
2182019 General chemistri phase equillibrium 2182091 2183091 2211581 The course provid and trans	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical a continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and there systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties mention), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher oriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika. Project Presentation Preparation and presentation of a given project theme. Transmissions es a general summary of transmissions for various applications which the student in the specialization designer-calculator meets. The sport machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission devices.	Z,ZK energy equation. Mult KZ of matter, thermonistry. Laboratory KZ Z Z,ZK e gearing basics of es of motor vehicles	5 Residence icomponent 3 dynamics, practice is 2 4 5 production is.
2182019 General chemistri phase equillibrium 2182091 2183091 2211581 The course provid and trans	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and there systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer. Chemistry ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties not engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochem oriented upon the material properties measurement. Project Absolvent se seznámí se základy oboru Procesní technika. Project Presentation Preparation and presentation of a given project theme. Transmissions es a general summary of transmissions for various applications which the student in the specialization designer-calculator meets. The sport machines will be briefly explained, important calculations will be discussed in more detail on the examples of transmission device. Project	Z,ZK energy equation. Mult KZ of matter, thermonistry. Laboratory KZ Z Z,ZK e gearing basics of es of motor vehicles	5 Residence icomponent 3 dynamics, practice is 2 4 5 production is.

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	stems with and with	nout friction.
	There are introduced the methods of description of position and motion of particles and rigid bodies.		
2311102	Mechanics II.	Z,ZK	4
•	and of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, s ion. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vect		
general spatial mot	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms with geers.		Laimemous
2312092	Department project	KZ	4
2012002	Individual asignment	112	•
2321039	Materials Science II.	Z,ZK	4
Fundamentals of m	netallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the	nermo-mechanical	processing,
	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materi		
2322029	Materials Science I.	KZ	3
	ent state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defor		
2351110	erials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in Modeling and simulation I.	Z,ZK	5 5
2331110	The subject is focused on explanation of the design of machine tool axis by individual parts and components.	Z,ZR	5
2351117	The despect to reduced an explanation of the design of maxima cost axis symmetric and compensation	Z,ZK	5
2001111	I Importance of fluid mechanisms and drives, principle, design and use. Divided on two parts - Hydraulics and Pneumatics.	_,,	
2352092	Specialization Project	KZ	4
The course is focus	sed on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student will ge	t acquainted with th	ne problems
•	nachines and the equipment, respectively its parts according to the orientation of their work, and during regular weekly consultations	•	
professional soluti	on of the problem. At the end of the semester students present their work on small oral examination in which they present the work p	erformed, the cohe	erence and
0000004	meaning.	1/7	
2362091	Project Programmer Transfer Project	KZ	2
2363091	Project Presentation	Z	4
2371047	Automatic Control lers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automat	Z,ZK	5
	ns, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentra	•	
	e 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.		
2372041	Computer Support for Study	KZ	3
	ces students into creating technical and professional documents on computers or Web and into realizing technical computations with t	•	
	al skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical		
2372083	Measurement in Engineering sor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	KZ	3 surement
OVERVIEW OF SCIE	instruments.	vermeation of mea	Surcinoni
2372091	Project	KZ	2
	An individual project from the branch of specialisation, which student will study on his/her magister level	'	
2373091	Project presentation	Z	4
· ·	pachelor work presentation. Student should study the presentation software possibilities and proposition of the department. Student should study the presentation software possibilities and proposition of the department.		
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. Conse	quently, the work s	should be
2201051	presented as a pdf file on a temporal web page. Management and Economics of the Enterprise	7 7V	1
2381054 The subject is inten	ded to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonin	Z,ZK	understand
=	ships between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audience	-	
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 servi	ces. Every
	ounter reports and should understand the basic structure of financial statements. As a future manager, he will compile and approve the		
_	they will learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project manageriaes, they will learn the applications of multi-criteria decision making. The basics of multi-criteria and attraction management will be	-	on-making
2383001	purposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be	Z	2
	Fundamentals of Law n legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provid		
	purces of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is n		- 1
our legal institutio	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 t	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
riuman communic	cation represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.	with specific modifi	cauons) to
K331068	Technology I	Z,ZK	5
	of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form		
	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatmen		
K333038	Fundamentals of Technology I.	Z	3
•	ses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technology		
	sting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tech		
riee and drop to	orging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of welding and arc welding with coated electrodes. Thermal cutting.	ang. i usion weidin	ig. i idilile
K341014	Technology II.	Z,ZK	5
	1	_,	

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-11-05, time 20:28.