Study plan

Name of study plan: 16 80 85 00 BVES TVA 2012 P 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 full-time

Required credits: 182 Elective courses credits: -1 Sum of credits in the plan: 181 Note on the plan: první pokus

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 171

The role of the block: P

Code of the group: 12B*P*P-TV

Name of the group: 07 2012 bakalá ský t locvik

Requirement credits in the group: In this group you have to gain 3 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 3

Note on the group: Letní výcvikový kurz je předmět povinný. Student jej může vykonat kdykoliv v průběhu studia,

avšak v souladu s příslušnými ustanoveními Ústavu tělesné výchovy a sportu ČVUT

3

Code of the group: 12B*P*P-ZT21

Name of the group: 04 2012 prezen ní ZT v po adí 21

Fundamentals of Technology I.

Requirement credits in the group: In this group you have to gain 6 credits

Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 6 Note on the group:

2333038

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
2333038	Fundamentals of Technology I.	Z	3	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12B*P*P-ZT21 Name=04 2012 prezen ní ZT v po adí 21

	. —	_
Production processes in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, ter	chnical metals. Pr	roduction of pig
iron and steel. Casting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming to	echnology. Hot an	nd cold forging.
Free and drop forging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of we	lding. Fusion weld	ding: Flame
wolding and are welding with costed electrodes. Thermal outling		

Code of the group: 12B-KMEN* VES

Name of the group: 01 2012 souhrn 12B**1P-KMEN a 12B**2P-KMEN Requirement credits in the group: In this group you have to gain 50 credits

Requirement courses in the group: In this group you have to complete 11 courses

Credits in the group: 50 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
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
2021041	Physics I.	Z,ZK	7	4P+1L	*	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
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
2372041	Computer Support for Study	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=12B-KMEN* VES Name=01 2012 souhrn 12B**1P-KMEN a 12B**2P-KMEN

2182019 | Chemistry | KZ | 3 General chemistry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties of matter, thermodynamics, phase equilibrium, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemistry. Laboratory practice is oriented upon the material properties measurement.

2021041 | Physics I. | Z,ZK | 7

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

2011021	Constructive Geometry	Z,ZK	6
The subject is focused	on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.		
2011056	Mathematics I	Z,ZK	8

In the course, greater emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connections between concepts. Students will also get to know the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: eigennumbers and eigenvectors of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.

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

History and present state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, deformation, recrystallization and fracture of materials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, iron-carbon phase diagram.

2012037	Computer Graphics	KZ	3			
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.

2131002 Engineering Design II Z,ZK 4

Principles of ISO GPS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface texture, geometrical tolerance, dimensional loops, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice their knowledge from lectures.

Code of the group: 12BVP3P

Name of the group: 08 2012 BVES 3.sem prezen ní povinné

Requirement credits in the group: In this group you have to gain 31 credits

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

Credits in the group: 31

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
2021025	Physics II.	Z,ZK	4	1P+2L	3	Р
2011009	Mathematics III Stanislav Kra mar	Z,ZK	5	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	
2331068	Technology I.	Z,ZK	5	2P+2C	*	Р	

Characteristics of the courses of this group of Study Plan: Code=12BVP3P Name=08 2012 BVES 3.sem prezen ní povinné

Characteristics of the courses of this group of Study Plan: Code=12BVP3P Name=08 2012 BVES 3.sem prezen ini povinne							
2021025 Physics II.	Z,ZK	4					
Faraday's law of electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic w	aves. Interaction					
of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom ar	nd periodic syster	n of elements.					
Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 ex	operiments related	d to the lectures.					
2011009 Mathematics III	Z,ZK	5					
An introductory course in ordinary differential equation and infinite series.	·	'					
2321039 Materials Science II.	Z,ZK	4					
Fundamentals of metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal an	d thermo-mechar	nical processing,					
technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.							
2331068 Technology I.	Z,ZK	5					
Foundry properties of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of forming processes. Semi-products,							
heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatments.							

Code of the group: 12BVP4P

Name of the group: 09 2012 BVES 4.sem prezen ní povinné

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 5 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
2342005	Quality Control	KZ	2	1P+1C+1L	*	Р
2341014	Technology II.	Z,ZK	5	2P+0C+2L	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BVP4P Name=09 2012 BVES 4.sem prezen ní povinné

2342005	Quality Control	KZ	2			
Basic quality control terms, where is quality created, who is responsible for a quality. Basic statistical terms and distributions. Statistical methods: statistical process control, statistical						
sampling. Tools and m	ethods for a quality assurance during product lifetime cycle. Standards 9 000 and 14 000, certification of quality control syster	ns.				
2341014	Technology II.	Z,ZK	5			
mechanics of chip formation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economics. Automation of processes,						
programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.						

Code of the group: 12BV*5P

Name of the group: 12 2012 BVES 5.sem povinné

Requirement credits in the group: In this group you have to gain 11 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 11 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
2141204	Introduction to Electrical Engineering for Technology	Z,ZK	4	2P+0C+2L	*	Р
2383001	Fundamentals of Law	Z	2	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BV*5P Name=12 2012 BVES 5.sem povinné

2141204	Introduction to Electrical Engineering for Technology	Z,ZK	4					
Elements of electrical circuits, analysis of electrical circuits as DC and AC. El. Power and Energy. Principle and typical parameters diodes, transistors, thyristors, operation amplifiers.								
Analogue and digital ci	Analogue and digital circuits. AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Transformer. Induction machines. Synchronous machines.							
DC-machines								
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: 12BV*5P-TVA

Name of the group: 14 2012 BVES 5.sem zam TVA povinné

Requirement credits in the group: In this group you have to gain 17 credits

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

Credits in the group: 17 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
2332038	Surface Treatment Technology	KZ	4	1P+2C	*	Р
2331505	Welding Technology	Z,ZK	4	2P+1C	*	Р
2322041	Heat treatment Jana Sobotová	KZ	4	2P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BV*5P-TVA Name=14 2012 BVES 5.sem zam TVA povinné

2332038 Surface Treatment Technology

TPU The course is an introduction to the topic of finishes (meaning and objectives of the field). They are introduced to the basics of corrosion distribution and its species. TPU focuses on corrosion protection in engineering and other industries. Are reconstructed surface preparation processes (mechanical, chemical). Among the discussed technologies finishes include coating technologies (such as electroplating, zinc plating) technology conversion layers, further application of organic coatings. An important issue is also ecological aspects, Technological design and testing in the field of surface treatment.

2331505	Welding Technology	Z,ZK	4
2322041	Heat treatment	KZ	4
Theoretical fundamenta	Is of heat treatment, basic processes of heat and chemical-heat treatment of ferrous and non-ferrous metals, excursion focu	sed on the given t	topic

Code of the group: 12BV*6P

Name of the group: 15 2012 BVES 6.sem povinné

Requirement credits in the group: In this group you have to gain 9 credits

Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 9 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	
2331071	Automation of Production Processes	Z,ZK	5	3P+2C	*	Р	

Characteristics of the courses of this group of Study Plan: Code=12BV*6P Name=15 2012 BVES 6.sem povinné

2331071 Automation of Production Processes

Automation of basic technological processes - casting, welding, forming and finishing. Facilities and equipment required to automate offices. Mechanization and automation in iron and steel foundries. Automation and robotics of die casting process, including other peripherals. Designing and programming of robotic welding centers. Designing and programming of

Automation of basic technological processes - casting, welding, forming and finishing. Facilities and equipment required to automate offices. Mechanization and automation in iron an steel foundries. Automation and robotics of die casting process, including other peripherals. Designing and programming of robotic welding centers. Designing and programming of robotic welding centers. Designing and programming of robotic welding centers. Designing and programming of automated finishing lines.

Code of the group: 12BVP6P-TVA

Name of the group: 16 2012 BVES 6.sem zam TVA prez povinné

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 5 courses

Credits in the group: 22 Note on the group:

•	9 1					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2333993	Bachelor Thesis	Z	5	0P+6C	*	Р
2332056	Preparations and Tools	KZ	3	0P+3C	*	Р
2331065	Design Consideration	Z,ZK	5	3P+1C	*	Р
2331506	Casting and Forming Technology	Z,ZK	5	3P+2C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BVP6P-TVA Name=16 2012 BVES 6.sem zam TVA prez povinné

2333993 Bachelor Thesis	Z	5
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2332056 Preparations and Tools

Principles of selection of the manufacturing method for semi-finished products. Production planning and production processes in the foundry. Production processes for forgings. Accuracy, stock material, utilized equipment. Production processes for stampings. Manufacturing of stampings, presses and equipment. Production processes for weldments. Operational sequence, filler materials, equipment. Plastic mouldings. Individual projects for production of a casting, forging or a stamping.

Design Consideration

Relations between design, production technique and economic aspects. Design considerations in casting, forming, welding, machining and assembly techniques. Basis for material

and production technology selection. Component detailing for manufacture. CNC basis and using CNC. 2331506 Casting and Forming Technology

Principles of selection of the manufacturing method for semi-finished products. Production planning and production processes in the foundry. Production processes for forgings, extrusion. Accuracy, stock material, utilized equipment. Production processes for stampings. Manufacturing of stampings, presses and equipment. Plastic mouldings. Individual projects for production of a casting, forging or a stamping.

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 11

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

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

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: 12BV*4Q-BZJ VES

Name of the group: 11 2012 bakalá ské zkoušky z jazyk pro VES

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:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2041061	English-Bachelor Exam Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michael Le Blanc Ilona Šimice (Gar.)	Z,ZK	2	0P+2C	*	PV
2041063	French - Bachelor Exam /FME 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=12BV*4Q-BZJ VES Name=11 2012 bakalá ské zkoušky z jazyk pro VES

2041061	English-Bachelor Exam	Z,ZK	2
Mapped to the Commor	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diff	iculties, to take pa	rt in discussions,
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.		

2041063 French - Bachelor Exam /FME

7.7K 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

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 | 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 | 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.

Code of the group: 12BV*4Q-ZAM

Name of the group: 10 2012 BVES 4.sem zam 1povvol

Requirement credits in the group: In this group you have to gain at least 5 credits (at most 10)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 2)

Credits in the group: 5 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2321067	Technical Application of Materials Stanislav Krum	Z,ZK	5	3P+1C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BV*4Q-ZAM Name=10 2012 BVES 4.sem zam 1povvol

2321067 Technical Application of Materials

P edm t popisuje aplikovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým trend m t chto skupin. The subject describes applicability of specific engineering material types and their characteristics. It deals with the current development trends in these materials as well.

Code of the group: 12BV*5Q-OP

Name of the group: 13 2012 BVES 5.sem 1povvol oborové projekty

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 8)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 4)

Credits in the group: 2 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2322091	Project Jana Sobotová	KZ	2	0P+2C	*	PV
2332091	Project	KZ	2	0P+2C	*	PV
2342091	Project	KZ	2	0P+2C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BV*5Q-OP Name=13 2012 BVES 5.sem 1povvol oborové projekty

On the basis of the preliminary submission of a bachelor thesis the students, under supervision of their supervisors, prepare a review summarizing and evaluating the studied literature with particular emphasis on experimental technologies which can be applied in their bachelor theses. They can also mention a planned experiment or evaluate hitherto obtained knowledge or results.

2332091	Project	KZ	2
2342091	Project	KZ	2
Work on specialized tas	ks.		

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

The role of the block: V

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

Name of the group: 02 2012 ALFA volitelné pro VES

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

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
202A041	Physics I.	ZK	3	0P+0L	*	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	ZK	4	0P+0C	*	V

Characteristics of the courses of this group of Study Plan: Code=12BV**V-ALFA Name=02 2012 ALFA voliteIné pro VES

202A041 | Physics I.

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

measurements of 11 various experiments related to the lectures.

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 al	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, 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.

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

Name of the group: 05 2012 doporu ené seminá e

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

Credits in the group: 0

Note on the group: Pokud si chce student své dosud získané znalosti (například z matematiky, fyziky, cizích jazyků

atd.) doplnit, může si zapsat některý z volitelných předmětů, které příslušné ústavy pro 1. semestr

(zimní) vypisují. Doporučujeme zejména předměty uvedené v této skupině

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2026016	Physics - Seminar	Z	2	0P+2C	1	V
2016007	Mathematics I Seminar Radka Keslerová, 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	eant for high-school students for repetition of high-school physics.		
2016007	Mathematics I Seminar	Z	2

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

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

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

Credits in the group: 0

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2046155	English Conversation Ilona Šimice, Michele Le Blanc Ilona Šimice Michele Le Blanc (Gar.)	Z	2	0P+2C	*	V
2046156	English Conversation 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, Michele Le Blanc Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, 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 (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 Veronika Kratochvilová Ilona Šimice	Z	2	0P+2C	L	V
2046126	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046125	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046118	Czech -Advanced	Z	2	0P+2C	L	V
2046117	Jaroslava Kommová Czech -Advanced	Z	2	0P+2C	Z	V
2046127	Jaroslava Kommová Czech - Upper Intermediate	Z	2	0P+2C	Z	V
2046128	Jaroslava Kommová Czech - Upper Intermediate	 Z	2	0P+2C	L	V
2046119	Jaroslava Kommová Czech Language for Beginners I. Jaroslava Kommová	 Z	2	0P+2C	Z	V
2046120	Jaroslava Kommová Czech Language for Beginners II.	Z	2	0P+2C	L	V
2046086	Jaroslava Kommová French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela	Z	2	0P+2C	Z	V
2046087	Schusová (Gar.) French - Lower Intermediate Course	Z	2	0P+2C		.,,
	Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.) French - Advanced				L	V
2046091	Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046088	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046084	French - Beginners Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	z	V
2046085	French - Beginners' Course 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
2046164	Presentations in Russian Dušana Jirovská	Z	2	0P+2C	*	V
2046163	Presentations in French language Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	*	V
2046165	Presentations in Spanish Eliška Vítková	Z	2	0P+2C	*	V
2046137	Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046138	Russian - Lower Intermediate Course 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 kurzy a prezenta	of the courses of this group of Study Plan: Code=12B**1V-DOP ZJK Name=06 2012 doporu	ené základní	jazykové
2046155	English Conversation	Z	2
Improving communic	ative skills in speaking on general topics and general technical topics.	1	1
2046156	English Conversation	Z	2
Improving communic	ative skills in speaking on general topics and general technical topics.	,	
2046071	English - Lower Intermediate	Z	2
Mapped to the Comm	ion European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations whic	h a student meets	either at school
or at his/her free time	and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improve	nent of professiona	al language.
2046070	English - Lower Intermediate	Z	2
_	learly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about th ng and comprehension of simple texts. Improvement of professional language. A1 - A2.	em. Writing in a sir	nple way about
2046074	English - Advanced	Z	2
level. Ability to write a	sion of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Wr summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's fi on advanced level. B1 - B2.		
2046075	English - Advanced	Z	2
and active participation	ion European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in in in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay reading and comprexts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046072	English - Upper Intermediate	Z	2
The aim is to extend I	anguage skills taking into consideration professional English and common professional terminology. Comprehension of standa	rd English speech រ	and conversation
about topics of every	day life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1.		
2046073	English - Upper Intermediate	Z	2
	non European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional E nension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on inter	•	•

speed to the Common European Framework of Reterence Level Al Aim. Basic vocabulary of everysty life in a written and spoken from Lindenstuding and use of basic expressioned scientific termology professional benguige). 46126 Czoch Lower Intermediate	2046068	English - Beginners	Z	2
agend to the Common European Framework of Reterence Level A1 Am. Basic vocabulary of everyday life in a written and spoken form. Understanding gend use of basic expenses are controlled to the Common	Aim: Basic vocabulary		professional langua	age). A1
parent solution terminology (probastional ingrugapy). Mid1256 Crach Lower Interrendiate To Cych Charles (Interrendiate) a subject meets at school or in his/her free time and speaking about them. Writing in a simple way ab mide trops Reading and comprehension of simple tests. Improvement of professional language. Mid125 Crach Lower Interrendiate To Cych Charles (Interrendiate) To Cych Advanced where the speaking which is spaken about everytally situation which a student meets at school or in his/her free time and speaking about them. Writing in a simple way ab militar topics. Reading and comprehension of simple tests. Improvement of professional language. Mid118 Crach Advanced in the speaking of the spea	2046069		Z	_
146126 Czech (over-Intermediate to Understanding data) what is speaker about energistly substances which a student meets at school or in his/her free time and speaking about them. Writing in a simple way ab miller topics. Reading and comprehension of simple tests. Improvement of professional language. 146125 Czech (over-Intermediate to Understanding data) what is speaker about energistly substances which a student meets at school or in his/her free time and speaking about them. Writing in a simple way ab miller topics. Reading and comprehension of anythe tests. Improvement of professional language. 146118 Czech Advanced and a simple tests. Improvement of professional language. 146118 Czech Advanced and a simple tests. Improvement of professional language. 146117 Czech - Advanced and comprehension of simple tests. Improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146117 Czech - Advanced and the simple test improvement of professional language. 146118 Czech - Advanced and the simple test improvement of professional language. 146119 Czech - Advanced and the simple test improvement of professional language. 146119 Czech - Advanced and test improvement of professional language. 146119 Czech - Language for Egiptimers I. and the simple test improvement of professional language. 146119 Czech - Language for Egiptimers I. and the simple test improvement of professional language. 146129 Czech - Language for Egiptimers I. and the simple test improvement of professional language. 146129 Czech - Language for Egiptimers I. and the simple	• • • • • • • • • • • • • • • • • • • •		laing and use of ba	asic expression
in Understanding clearly what is sporker about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way ab indirect spice. In Understanding design what is a sporker about everyday valuations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way ab indirect spice. Reading and comprehension of aimple texts. Improvement of professional language. 146118 Czech Advanced Common European Farmanok of Reference B1 - B2. The aim: comprehension of spoken Czech as well as lectures given in Czech without great discussed with a student meets at school or in his/her free time and speaking about them. Writing in a simple way ab miller topic. Reading and comprehension of spoken Czech as well as lectures given in Czech without great discussed with a student meets and speaking about them. Writing in a simple way about the manufacture of the spoken as summary; register, an ecosy, Reading and comprehension of spoken register. The student is student and section of the spoken common and the spoken as summary; register, an ecosy, Reading and comprehension of spoken register. The student is student as student of the spoken as summary; register, and student section of the spoken as summary; register, and student section of the spoken as summary; register, and student section of the spoken as summary; register, and student section of the spoken and student sections. The spoken and student sections are student sections of the spoken and student sections. The spoken and student sections are spoken as such as student sections and sections of the spoken and student sections. The spoken as students are student sections of the spoken and students sections as students as student meets as student meets as student meets as student meets as students meets as students. The spoken as students are students as students are students as students and students. The spoken as students are students as students are students as students as st	2046126		Z	2
Medit 25 Czech Lower Intermediate mounted as subsert meets at school or in haiher free time and speaking about them. Writing in a surple way ab millior topics. Reading and comprehension of simple tests. Improvement of professional anguage. We participation in a discussion. Written and ord skill on advanced level. Ability to write a summary, a report a estage Reading and comprehension of popular-cellent and entire surches or assist from suctions field of shulders without difficulties. General surchesions all surple way about 18 february 1			em. Writing in a sin	nple way abou
in Understanding dearly what is a spoken about emerged visualisms which a subtent meets at chool or in high-her free time and speaking about them. Writing in a simple way abilities topics. Reading and comprehension of imple tests. Improvement of professional impages. 2 2 2 2 2 2 2 3 2 2 2 3 2 3 2 3 3 3 3	amiliar topics. Reading			
hiller topics. Reading and comprehension of simple tests. Improvement of professional language. Paper Pap	2046125	I .	_	
paged to the level of Common European Framework of Refurence: B1-B2 The aim: comprohension of spoken Cooch as well as fectures given in Cooch whosh pared difficulties be participation in a discussion. Written and oral akids on advanced level, Ahlity to write a summary, a report, as easily and comprehension of popular-scientific and elementarities and elementarities and elementarities and elementarities. Programma for the control of the student of the student of the student comprehension of popular scientific and control and an advanced comprehension of special in a special popular scientific and control and accusions. Expressing opinition skills, Ahlity to write an essay or a report. Reading and understanding general and school, during free time, and salking about these topics. Ablity to describe experiences an entitle, their popular one is opinions and plans. Reading and understanding general and school; during free time, and salking about these topics. Ablity to describe experiences an entitle, their popular one is opinions and plans. Reading and understanding general and school; during free time, and salking about these topics. Ablity to describe experiences an entitle, their popular scientific and control professional control professional scientific and control professional scienti	_		em. Writing in a sin	nple way abou
apped to the level of Common European Framework of Reference IS-12. The aim: comprehension of spoken Casch as well as lectures given in Casch without great distilutions the participation in a discussion. Witten and oal skills on advanced text. Altity to write a summary, a report, an essay, Reading and comprehension of proplar-scientific and entitle carriates or texts from student's feet of studies without difficulties. Genomes structures on advanced level. Casch - Advanced Ze Ze prephension of spoken languages as well as is ectures in Casch on topics familiar to the student. Communication with naïve speakers, participation in discussions. Expressing opinities will as a list of the proof of the participation	2046118		7	2
identificated se or texts from students find of studies without difficulties. Generator structures on advanced level. Czech - Advanced Z 2 2 2 2 2 2 2 2 2		I and the state of		_
Maint Cazach - Advanced more there is a few at a feature in Cazech on topics familiar to the student. Communication with native speakers, participation in discussions. Expressing opinities skills. Ability to write an essay or a report. Reading and understanding texts concurring current issues and popular scientific and technical articles. Value Val			nsion of popular-sc	eientific and
imprehension of spothen language as well as lectures in Cased no topics familiar to the student. Communication with native speakers, participation in discussions. Expressing opinities delike alkilly own than ensety or a report. Reading and understanding tests concerning currant issues and popular scientific and technical articles. M6127 Caceh - Upper Intermediate Caceh - Upper Intermed				
inten skills, Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical articles. Value Value		I and the state of	_	_
M6127 Cacch - Upper Intermediate discussions and patents are substituted to the product as the product of the				essing opinion
Modes Carech - Upper Intermediate Quarter Carech - Upper Intermediate Quarter Quarte	2046127		1	2
paged to the Common European Framework of Reference Level A2B1. The aim is to extend language skills taking into consideration professional Czech and common professional pages. Paged to the Common European Framework of Reference Level A2B1. The aim is to extend language skills taking into consideration professional Czech and common professional disputage. Paged 119	Jnderstanding standar	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abi	lity to describe exp	eriences and
speed to the Common European Framework of Reference Level A.28. It The aim is to extend language skills skining into consideration professional Czech and common professional minimology. Comprehension of standards Czech speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate level. Breadening the wildedge technical language. 466.119 Czech Language for Beginners I. Z 2 2 2 2 2 2 2 2 2				
windology, Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening the windedge technical language. 2 2 as evolution of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (professional language) and publication of the Common European Framework of Reference Level A1 Am: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language) and expert sections of the Common European Framework of Reference Level A1 Am: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional language). 346088 French - Lower Intermediate Course 42 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 3 3 3 3				_
Add 119 Czech Language for Beginners I. Z 2				
Add 120 Czech Language for Beginners II. 2 2 speed to the Common European Framework or Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic express general scientific terminology (professional language). WelderStanding 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 far incise. Reading and comprehension of simple texts. Improvement of professional language, but described or Gormon European Framework of Reference 2.4 Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about far incise. Reading and comprehension of simple texts. Improvement of professional language, but the level of Common European Framework of Reference: 2.7 Aim: Understanding clearly what is spoken about everyday situations which a student meets at a school or where the time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	• • • • • • • • • • • • • • • • • • • •			
Add 120 Czech Language for Beginners II. Z 2 2 2 2 2 3 3 3 3 3	2046119	Czech Language for Beginners I.	Z	2
spect 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 express general scientific terminology (professional language). JA6088 French - Lower Intermediate Course Z 2 Z 2 JA6087 French - Lower Intermediate Course Z 2 JA6089 French - Advanced Z 2 JA6089 French - More and seasy or a report. Reading and understanding texts concerning issues and popular scientific and technical articles. JA6089 French - Upper Intermediate Z 2 JA6089 French - Upper Intermediate	Basic vocabulary of eve	ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes		
general scientific terminology (professional language). 46086 French - Lower Intermediate Course Z 2 46087 General Cearly 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 notice. Reading and comprehension of simple texts. Improvement of professional language. 46087 French - Lower Intermediate Course Z 2 46087 French - Lower Intermediate Course Z 2 46091 French - Advanced Z 2 46090 French - Upper Intermediate Z 2 46090 Z 2 46090 French - Upper Intermediate Z 2 46090 Z 2 46090 French - Upper Intermediate Z 2 46090	2046120		_	_
Additional French - Lower Intermediate Course Z 2 2 2 2 2 2 2 3 3 3			nding and use of ba	asıc expressio
referstanding 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 far ics. Reading and comprehension of simple texts. Improvement of professional language. 7 French - Lower Interrendiate Course 7 French - Lower Interrendiate Course 8 Ternor - Lower Interrendiate Course 9 Ternor - Advanced 9 Ternor - Advanced 9 Ternor - Advanced Ternor - Experiment of professional language of the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on topics familiar to the student. International transparence of the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on topics familiar to the student. International transparence of the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on topics familiar to the student. International state of the student of	-		7	2
Prench - Lower Intermediate Course Z 2 2 2 2 3 3 4 4 5 5 5 5 5 5 5 5			_	_
apped to the level of Common European Framework of Reference: A2 Amr. Understanding clearly what is spoken about everyday situations which a student meets at school or where free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A66091 French - Advanced Z 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3	opics. Reading and co	mprehension of simple texts. Improvement of professional language.		
where free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. Prench - Advanced	2046087			
Perench - Advanced French - Advanced Z 2 2 2 2 2 2 3 3 3 3				
apped to the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on topics familiar to the student. Immunication with native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts conceived in the student of the policy				
Prench - Advanced popular scientific and technical articles. AdeO90 French - Advanced Z 2			- 1	
Prench - Advanced French - Seginners Forch - Upper Intermediate Apped to the level of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a student scenning general and technical tributes and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical tributes and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical tributes and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical tributes and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical tributes and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical texts. ### Interval Aderstanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability to describe experiences and ents, briefly explain one's opinions and plans. Reading and understanding general and technical texts. #### Interval Aderstanding standard speech about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. #### Interval Aderstanding standard speech about teveryday 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. ##### Interval Aderstanding standard speech about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a sim			and understanding t	texts concerni
proprehension of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation in discussions. Expressing initions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical articles. AGO French - Upper Intermediate Z 2		·		
inions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical articles. Year				_
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List of courses of this pass:

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ommunication with native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concern			1	1
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2040000	Conside Designate	Z	2
2046096 Aim:Understandin	Spanish - Beginners ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	_
7	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Trining in a cirriple	nay about
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 tin	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	guage.
2046098	Spanish - Lower Intermediate	Z	2
Understanding clea	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	ງ 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
	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of j		
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	
	en skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t		
2046118	Czech -Advanced	Z	2
	el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec	_	
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	ion of popular-scie	ntific and
2040440	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	7	
2046119	Czech Language for Beginners I. abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	Z Z	2
2046120	Czech Language for Beginners II.	7	2
	mmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understandin	ا ہے۔ a and use of basic	
	of general scientific terminology (professional language).	,	
2046125	Czech Lower Intermediate	Z	2
Aim: Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046126	Czech Lower Intermediate	Z	2
Aim: Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
2046427	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	7	2
2046127	Czech - Upper Intermediate tandard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	_	
Onderstanding st	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	to describe experie	criocs and
2046128	Czech - Upper Intermediate	Z	2
	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
	knowledge technical language.		
2046135	Russian - Beginners	Z	2
2046136	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rolessional langua	ge) 2
	Russian - Beginners rel of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	and use of basic e	
Mapped to the lov	of general scientific terminology (professional language)		жртооологю
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	j in a simple way at	oout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046138	Russian - Lower Intermediate Course	Z	2
	el of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stude		
	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	orotessional langua	
2046139	Russian - Upper Intermediate tandard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi	2
Officerstationing st	events, briefly explain one s opinions and plans. Reading and understanding general and technical texts.	to describe experie	ences and
2046140	Russian - Upper Intermediate	Z	2
I .	vel of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me		
free time, and talki	ing about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understandi	ng general and tecl	hnical texts.
2046141	Russian - Advanced	Z	2
1	of spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation		
·	Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific		
2046142	Russian - Advanced	Z	2
1 ' '	level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to th native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	•	
John Million William	currant issues and popular scientific and technical articles.		Somooning
2046155	English Conversation	Z	2
	Improving communicative skills in speaking on general topics and general technical topics.		_
2046156	English Conversation	Z	2
	Improving communicative skills in speaking on general topics and general technical topics.	' '	ı
2046161	Presentations in English	Z	2
	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.		
2046162	Presentations in German	Z	2
1	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.		

2046163	Presentations in French language	Z	2
2046164	Preparation for presenting technical topics in French, possibly in cooperation with specialized departments. Presentations in Russian	Z	2
2046165	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments. Presentations in Spanish	Z	2
2040400	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.	7	·
2046166	Presentations in Czech Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departn		2
2131002	Engineering Design II	Z,ZK	4
•	PS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface is, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice th	. •	
2141204	Introduction to Electrical Engineering for Technology	Z,ZK	4
	cal circuits, analysis of electrical circuits as DC and AC. El. Power and Energy. Principle and typical parameters diodes, transistors, ligital circuits. AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Transformer. Induction machine DC-machines		-
2144062	Technical Indonesian - Course II.	Z,ZK	3
2146060	Basic of Indonesian Language for Student Exchange Program to Indonesia Indonesian Language Course for Exchange	Z	2
04.40004	Basic of Indonesian Language for Student Exchange Program to Indonesia		1 0
2146061	Technical Indonesian - Course I. Second part of Indonesian Language for Student Exchange Program to Indonesia	Z	2
2182019	Chemistry	KZ	3
-	r from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties)		-
pnase equilibrium,	, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and bioche oriented upon the material properties measurement.	amistry. Laboratory	practice is
2321039	Materials Science II.	Z,ZK	4
	etallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and		l processing
	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of mate		1
2321067	Technical Application of Materials	Z,ZK	5
	olikovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým trer es applicability of specific engineering material types and their characteristics. It deals with the current development trends in these		
2322029	es applicability of specific engineering material types and their characteristics, it deals with the current development trends in these Materials Science I.	KZ	3
	nt state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defo	1	1
	rials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations,	-	
2322041	Heat treatment	KZ	4
Theoretical ful	ndamentals of heat treatment, basic processes of heat and chemical-heat treatment of ferrous and non-ferrous metals, excursion for	ocused on the giver	n topic
2322091	Project	KZ	2
	preliminary submission of a bachelor thesis the students, under supervision of their supervisors, prepare a review summarizing and aphasis on experimental technologies which can be applied in their bachelor theses. They can also mention a planned experiment	_	
	knowledge or results.		
2331065 Relations between	Design Consideration design, production technique and economic aspects. Design considerations in casting, forming, welding, machining and assembly	Z,ZK techniques. Basis	5 for material
2221069	and production technology selection. Component detailing for manufacture. CNC basis and using CNC.	7.71/	- E
2331068 Foundry properties of	Technology I. of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of for		5 mi-products
2331071	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatmen Automation of Production Processes	z,ZK	5
	technological processes - casting, welding, forming and finishing. Facilities and equipment required to automate offices. Mechaniza	•	I
	tomation and robotics of die casting process, including other peripherals. Designing and programming of robotic welding centers. E robotic workstations for sheet metal forming. Design of automated forging cells. Design of automated finishing lines.		
2331505	Welding Technology	Z,ZK	4
2331506	Casting and Forming Technology	Z,ZK	5
Principles of selection	on of the manufacturing method for semi-finished products. Production planning and production processes in the foundry. Production particularly in the foundry of the manufacturing of stampings, presses and equipment. Plastic mou	processes for forging	-
	production of a casting, forging or a stamping.		1
2332038	Surface Treatment Technology	KZ	TDU focuso
	an introduction to the topic of finishes (meaning and objectives of the field). They are introduced to the basics of corrosion distribution in engineering and other industries. Are reconstructed surface preparation processes (mechanical, chemical). Among the discuss		
-	s (such as electroplating, zinc plating) technology conversion layers, further application of organic coatings. An important issue is also e	_	
	design and testing in the field of surface treatment.		
2332056	Preparations and Tools	KZ	3
•	ection of the manufacturing method for semi-finished products. Production planning and production processes in the foundry. Production processes and equipment. Production processes for stampings. Manufacturing of stampings, presses and equipment. Production processes for stampings. Individual projects for production of a section of the production of a section of the production of a section of the production of the production of the production of a section of the production of the product	sses for weldments.	
2322004	sequence, filler materials, equipment. Plastic mouldings. Individual projects for production of a casting, forging or a stampi		2
2332091	Project Fundamentals of Tachnology I	KZ Z	2
iron and steel. Cas	Fundamentals of Technology I. ses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, tech ting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tec ging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of we	nnical metals. Produ chnology. Hot and c	old forging.
	welding and arc welding with coated electrodes. Thermal cutting.		

2333993	Bachelor Thesis	Z	5
2341014	Technology II.	Z,ZK	5
mechanics of chip f	formation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining econor	nics. Automation o	of processes
	programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.		
2342005	Quality Control	KZ	2
Basic quality contr	ol terms, where is quality created, who is responsible for a quality. Basic statistical terms and distributions. Statistical methods: statist	ical process contr	ol, statistical
san	npling. Tools and methods for a quality assurance during product lifetime cycle. Standards 9 000 and 14 000, certification of quality co	ontrol systems.	
2342091	Project	KZ	2
	Work on specialized tasks.	!	'
2372041	Computer Support for Study	KZ	3
The course introdu	ces students into creating technical and professional documents on computers or Web and into realizing technical computations with t	he use of compute	ers. Students
gain practica	al skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical	ical-based WWW	page.
2383001	Fundamentals of Law	Z	2
Basic orientation in	n legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provid	le a view into the	Czech Lega
Order, particular so	ources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is n	ecessary for stude	ents to know
our legal institution	ons, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.	At the same time	the course
leads students to 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	e them ready
	to prepare professional presentations and to understand basic structures between law and engineering		
2383009	Communication and Dealing with People	Z	2
Human communic	cation represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (with specific modi	fications) to
	the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.		

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-10-18, time 04:58.