Study plan

Name of study plan: 15 80 85 00 DVES OBR 2012 P

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: 115
Elective courses credits: 66
Sum of credits in the plan: 181

Note on the plan: SP12DVES-MUSTR # SP12BVES-EKO-P # první pokus

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 106

The role of the block: P

Code of the group: 12BVP4P

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

2342005	Quality Control	KZ	2			
Basic quality control ter	ms, where is quality created, who is responsible for a quality. Basic statistical terms and distributions. Statistical methods: sta	tistical process co	ontrol, statistical			
sampling. Tools and me	thods 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 process						
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 circuits. AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Transformer. Induction machines. Synchronous machines.

DC-machines

2383001 Fundamentals of Law

Basic orientation in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course 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

Code of the group: 12BV*5P-OBR

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

to prepare professional presentations and to understand basic structures between law and engineering

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
2342032	Automation of machine tool programming	KZ	3	1P+2C	*	Р
2341515	Manufacturing process planning	Z,ZK	4	2P+2C	*	Р
2341001	Metrology	Z,ZK	5	2P+0C+2L	*	Р

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

Characteristics of	the courses of this group of Study Plan: Code=12BV*5P-OBR Name=14 2012 BVES 5.sem	zam OBR po	ovinne							
2342032	Automation of machine tool programming	KZ	3							
Utilizations of compute	technique for preparation of NC programs for lathe and milling machinery. Utilizations of probes on CNC machine tool.									
2341515	Manufacturing process planning	Z,ZK	4							
Objective of the course	in terms of learning outcomes and competences. The aim of the course is to acquaint students with modern approaches and me	ethodology of des	igning machining							
processes with regard	to minimization of material consumption and economic efficiency of the machining process. Next, introducing students to the	designing of asse	embly processes							
with respect to technical	al and organizational conditions. Further, the aim of the subject is to explain the issue of standardization of work with regard to	the type of proc	ess and the type							
of performed activity.										
2341001	Metrology	Z,ZK	5							
Metrology, intergration i	nto quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and s	econdary standar	rts. Measurement							
in 1, 2, end 3 coordinat	es. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface struct	ure - roughness,	wawiness.							
Measurement automat	sation.	easurement automatisation.								

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	Z,ZK	5	
Automation of basic tecl	hological processes - casting, welding, forming and finishing. Facilities and equipment required to automate offices. Mechan	ization and autom	ation in iron and	
steel foundries. Automa	tion and robotics of die casting process, including other peripherals. Designing and programming of robotic welding centers.	Designing and pro	ogramming of	

robotic workstations for sheet metal forming. Design of automated forging cells. Design of automated finishing lines.

Code of the group: 12BV*6P-OBR

Name of the group: 16 2012 BVES 6.sem zam OBR 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.

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2343993	Bachelor thesis	Z	5	0P+6C	*	Р

2341002	Cutting tools	Z,ZK	4	2P+1C	*	Р
2341068	Special machining technology	Z,ZK	5	3P+2C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BV*6P-OBR Name=16 2012 BVES 6.sem zam OBR povinné

2343993 Bachelor thesis Sources of information in the field. Databases and corporate literature. Normalization. Search activity. News from the field of engineering technology. Principles of research and work in laboratories. The principles of work safety in technological devices. Work on specialized tasks related to the focus of a thesis.

2341002 Cutting tools

Cutting tools characteristics. Cutting materials including heat treatment and surface finish, application fields. Cutting tool geometry, determination and measurement. Cutting tools elements design. Cutting tools design including dimensioning. Cutting tools production. Basic tools groups description and their use (turning tools, milling tools, etc.). Special cutting tools. Grinding, use and maintenance of cutting tools.

2341068 Special machining technology Z,ZK

Z.ZK

Development of cutting material, cutting speed development and consequences on the properties of surface finish. Hard and precision machining, engineering economics and ecology. Influence of surface layer and selecting methods of machining process parameters. New methods of abrasive machining, grinding of ceramics, grinding difficult-materials. Expert, adaptive and intelligent control systems, abrasive processes. Physical methods of machining, manufacturing methods and gear threading, finishing methods. Technology in the aerospace industries, automotive, energy and other areas.

Code of the group: 12DVP1P-KMEN

Name of the group: 00 2012 D kmenové 1. semestr VES prezenční

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, Vojtěch Bělohlav, Jan Skočilas, 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, Jiří Holman, Gejza Dohnal, Marta Čertíková, Vladimír Hric, Nikola Pajerová, Petr Louda, Lukáš Hájek, Radka Keslerová Gejza Dohnal (Gar.)	Z,ZK	8	4P+4C	*	Р
2372041	Computer Support for Study	KZ	3	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DVP1P-KMEN Name=00 2012 D kmenové 1. semestr VES prezenční 2182019 Chemistry K7

2102010	Chomicaly	'\~	, ,	
General chemistry from	the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properti	es of matter, therr	nodynamics,	
phase equilibrium, chem	ical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and bioch	emistry. Laborator	ry practice is	
oriented upon the mater	al properties measurement.			
2011021	Constructive Geometry	7 7K	6	

The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations. 2011056 Mathematics I 7 7K

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

of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions

2372041 Computer Support for Study The course introduces students into creating technical and professional documents on computers or Web and into realizing technical computations with the use of computers. Students

gain practical skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical-based WWW page.

Code of the group: 12DVP2P-KMEN

Name of the group: 00 2012 D kmenové 2. semestr VES prezenční

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

Requirement courses in the group: In this group you have to complete 5 courses

Credits in the group: 25

Note on the group.

12B**2P-KMEN #

NOTE OF 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
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
2333017	Surface Treatment	Z	3	1P+1C	*	Р
2131002	Engineering Design II	Z,ZK	4	2P+3C	2	Р
2333038	Fundamentals of Technology I.	Z	3	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12DVP2P-KMEN Name=00 2012 D kmenové 2, semestr VES prezenční 2021041 Physics I. 7 7K

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,

2011062 Matematika II.

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. ΚZ 3 History and present state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, deformation, recrystallization and

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

ΚZ 2012037 **Computer Graphics** Ζ 2333017 **Surface Treatment** 3

Introduction to the surface treatments - branch signification and objects. Principles of corrosion, types and corrosion distribution. Anticorrosive prevention in manufacturing, method anticorrosive prevention. Corrosion testing. Surface pre-treatment. Converse coatings, enamels. Inorganic coatings, electroplating, hot-dip galvanizing. Organic coatings. Ecological aspects of surface treatments.

2131002 Engineering Design II Z,ZK

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.

Fundamentals of Technology I.

measurements of 11 various experiments related to the lectures.

Production processes in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technology of engineering 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: 12DVP3P-KMEN

Name of the group: 00 2012 D kmenové 3. semestr redukované pro VES prezenční

heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatments.

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

Credits in the group: 0

Note on the group:

12BV*3P-KMEN-R #

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 Kračmar	Z,ZK	5	2P+2C	*	Р
2321039	Materials Science II. Jiří Cejp, Jakub Horník, Jana Sobotová, Elena Čižmárová, Eliška Galčíková, 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=12DVP3P-KMEN Name=00 2012 D kmenové 3. semestr redukované pro VES prezenční

2021025	Physics II.	Z,ZK	4					
Faraday's law of electro	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 a	nd periodic syster	n of elements.					
Spectra, x-rays, ;laser. I	Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	xperiments related	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 metall	urgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal ar	nd thermo-mechar	ical processing,					
technical iron-carbon al	loys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.							
2331068	Technology I.	Z,ZK	5					
Foundry properties of m	etals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of	forming processes	. Semi-products,					

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 9

The role of the block: PV

Code of the group: 12BV*4Q-BZJ VES

Name of the group: 11 2012 bakalářské zkoušky z jazyků 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, 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=12BV*4Q-BZJ VES Name=11 2012 bakalářské zkoušky z jazyků 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	Z,ZK	2				
Mapped to the Commor	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diff	iculties, to take pa	rt in discussions,				
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.						
2041062	German - Bachelor Exam / FME	Z,ZK	2				
Mapped to the Commor	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diff	iculties, to take pa	rt in discussions,				
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.						
2041065	Russian - Bachelor Exam / FME	Z,ZK	2				
Mapped to the Commor	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diff	iculties, to take pa	rt in discussions,				
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.						
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2				
Mapped to the Commor	Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions,						
to write a summary, a re	eport and an essay, to read technical texts, to master grammar at advanced level.		l				

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 Z,ZK 5

Předmět popisuje aplikovatelnost jednotlivých skupin inženýrských materiálů a jejich odpovídající vlastnosti. Rovněž se věnuje aktuálním vývojovým trendům těchto 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 1 povvol 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

2322091 | Project | KZ | 2
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 Radka Keslerová	ZK	4	0P+0C	*	V

Characteristics of the courses of this group of Study Plan: Code=12BV**V-ALFA Name=02 2012 ALFA volitelné 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 algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable					
201A062	Mathematics II.A	ZK	4		

Open and closed set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differential operators div (divergence) and curl (rotation). Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral, Fubini theorem. Transformation of integrals to polar, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green's theorem. A potential vector field, independence of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector field through a surface. The Gauss-Ostrogradskij theorem.

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

Name of the group: 05 2012 doporučené semináře

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

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2026016	Physics - Seminar	Z	2	0P+2C	1	V
2016007	Mathematics I Seminar Radka Keslerová, Ludék Beneš, Hynek Řezníček, 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 doporučené semináře

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

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

Name of the group: 06 2012 doporučené 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 g						
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	*	٧
2046156	English Conversation Michele Le Blanc	Z	2	0P+2C	L	٧
2046071	English - Lower Intermediate Veronika Kratochvílová	Z	2	0P+2C	L	٧
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, Michaela Le Blanc Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michaele 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 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	٧
2046118	Czech -Advanced Jaroslava Kommová	Z	2	0P+2C	L	٧
2046117	Czech -Advanced Jaroslava Kommová	Z	2	0P+2C	Z	V
2046127	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	٧
2046128	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	L	٧
2046119	Czech Language for Beginners I. Jaroslava Kommová	Z	2	0P+2C	Z	٧
2046120	Czech Language for Beginners II. Jaroslava Kommová	Z	2	0P+2C	L	٧
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 Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046091	French - Advanced Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	V
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046089	French - Upper Intermediate Dušana Jirovská 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	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 Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V

2046155	English Conversation	Z	
mproving communicati	English Conversation /e skills in speaking on general topics and general technical topics.	2	2
2046156	English Conversation	Z	2
	re skills in speaking on general topics and general technical topics.	2	2
2046071	English - Lower Intermediate	7	2
	n European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which	_	
	nd speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improven		
2046070	English - Lower Intermediate	7	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	. –	l .
	and comprehension of simple texts. Improvement of professional language. A1 - A2.		
2046074	English - Advanced	7	2
	n of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Wri	itten and oral skills	_
	ummary, a report, an essay reading and comprehension of popular-scientific and scientific articles or texts from student's fin		
rammar structures on	advanced level. B1 - B2.		
2046075	English - Advanced	Z	2
	n European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in	English without gr	eat difficulties
nd active participation	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and compre	ehension of popula	ar-scientific and
cientific articles or text	s from student's field of studies without difficulties. Grammar structures on advanced level.		
2046072	English - Upper Intermediate	Z	2
he aim is to extend lan	guage skills taking into consideration professional English and common professional terminology. Comprehension of standar	d English speech	and conversatio
bout topics of everyda	/ life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1.		
2046073	English - Upper Intermediate	Z	2
	n European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional En	nglish and commo	n professional
	nsion of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on interr		
nowledge.			
2046068	English - Beginners	Z	2
im: Basic vocabulary o	f everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (professional langu	age). A1
2046069	English - Beginners	Z	2
	European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understai	nding and use of b	asic expression
f general scientific terr	ninology (professional language).	-	•
2046126	Czech Lower Intermediate	Z	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	em. Writing in a si	nple way about
amiliar topics. Reading	and comprehension of simple texts. Improvement of professional language.		
2046125	Czech Lower Intermediate	Z	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about th	em. Writing in a si	nple way about
amiliar topics. Reading	and comprehension of simple texts. Improvement of professional language.		
2046118	Czech -Advanced	Z	2
	common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in	Czech without gre	at difficulties an
ctive participation in a	discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compreher	nsion of popular-s	cientific and
cientific articles or text	s from student's field of studies without difficulties. Grammar structures on advanced level.		
2046117	Czech -Advanced	Z	2
comprehension of spok	er language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	n discussions. Exp	ressing opinions
Vritten skills. Ability to	vrite an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical a	articles.	
2046127	Czech - Upper Intermediate	Z	2
Inderstanding standard	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	1
vents, briefly explain o	ne's opinions and plans. Reading and understanding general and technical texts.		
2046128	Czech - Upper Intermediate	Z	2
	n European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professiona	1	1
	nsion of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inte	rmadiata laval Bro	nadening the
Napped to the Common		illiediale level. Dit	Jaaogo
Napped to the Common			
Mapped to the Common erminology. Comprehe	guage.	Z	2
Mapped to the Common erminology. Comprehen nowledge technical lan 2046119		Z	_
Mapped to the Common erminology. Compreher nowledge technical lar 2046119 Basic vocabulary of eve	guage. Czech Language for Beginners I. ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	Z	2
Mapped to the Common erminology. Comprehent nowledge technical land 2046119 Basic vocabulary of even 2046120	guage. Czech Language for Beginners I.	Z ssional language)	2
Mapped to the Common erminology. Comprehent nowledge technical lar 2046119 Basic vocabulary of ever 2046120 Mapped to the Common	Czech Language for Beginners I. ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profestive Language for Beginners II. European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understand	Z ssional language)	2
Mapped to the Common erminology. Comprehent nowledge technical lar 2046119 Basic vocabulary of ever 2046120 Mapped to the Common	guage. Czech Language for Beginners I. ryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profestive Language for Beginners II.	Z ssional language)	2

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Alapsed to the level of Common European Framework of reference B1 - 82 Competentation of societies having age as well as extitute to the student. Communication with these bapealess, anchological on discussions. Separation proteins with the student communication with these passeds, anchological on discussions. Separation proteins and communication with the student communication with the student communication with an easier of separation of special and technical and selections. Framework of the student communication with making specialists, participation in discussions. Personal passed on the student communication with a student specialists of the students and specialists and specialists of the students and specialists of the students and specialists and specia	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 la	nguage.
Communication with native speakers, participation in discussions. Expressing opinions, Written avide, Ability to write an essay or a report. Reading and understanding texts concentrum interest and possible in a strict resident characteristic and text communication with native speakers, participation in companies and the propriet and text communication with native speakers, participation in discussions. Expressing agreems. Written akids. Joiling in with an invessing or a report. Reading and understanding state concentrum gurnari issues and explain statellities and exhibits a written and applications. The propriet of the present in the present of the present o	2046091	French - Advanced	Z	2
James and appeals assimiliar and technical articles. 2 2 2 2 2 2 2 2 2 3 3 3 4 4 3 5 5 3 5 6 4 6 6 5 6 6 6 7	• •		-	
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Comprehension of aponen Institutage as well as features in French on topics familiar to the student. Communication with making Abilty on the one seeps or a recoff Reserving and understanding patients used early paid controlled and seep and the students of the property of	·		7	
gelinone. Writen stills. Ability's ow the an essay or a report. Reading and understanding seats concerning current sessee and opposite scientific and scient			_	l .
2 2 2 2406088 French - Upper Infermedate Magnet to the test of Common European Framework of Reference A2 - B1 Understanding standard speech about familiar topics. That a students cores access along with a student core access and services, and place to the test of Common European Framework of Reference A2 - B1 Understanding standard speech about familiar topics. Attaility to describe experiences and events, explain or in a ophisions and plans. Reading and understanding general and reference and events, explain or in a ophisions and plans. Reading and understanding general and recommon form of the plans of th				Expressing
Allegapet to the lowel of Common European Framework of Reference A2. Bit Understanding standard speach about familiar topics, that a substance science across at work, at school, utilizing free time, and taking about the settings and understanding general and technical standard speach about familiar rathes that a student meets at work, at school, during free time, and taking about these leopies. Ability to describe experiences and works. Pricing and understanding and understanding general and technical texts. 2 2 2-Indestrating clearly what is appoint and comprehensing and understanding aperental and technical texts. 2 3 2-Indestrating clearly what is appoint a school or in histher free time and speaking about them. Writing in a simple way about femiliar policy. Reading and comprehension of anippute texts. Improvement of professional integrations. 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•			2
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Protoch - Uppor Intermediate Technolar				
Understanding standards speech about familiar matters that a student meeta at work, at school, during free time, and talking about these topics. Aboilty to describe experiences and works, briefly expedit on one sportures and planes. Reading and understanding general and otherhical tosts. 2	2046088		Z	i
2 2 2 2 2 2 2 2 2 2	Understanding standa	ard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abil	ity to describe exp	periences and
Indenstanding clearly what is socken 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 familia gobs. Reading and comprehension of simple tests. Improvement of professional language. 2 2 2 2 2 2 2 3 2 2 2 3 3 3 3 3 3 3 3	events, briefly explain	one's opinions and plans. Reading and understanding general and technical texts.		
spoks. Reading and comprehension of simple tests. Improvement of professional language. 2 Adapted to the level of Common European Framework of Reference. At Ami: Understanding clearly what is spoken about everyday situations which a student meets at school or in insher free terms and speaking about them. Writing in a simple way about familiar projects. Reading and comprehension of simple tests. Improvement of professional languages. 2 Adapted to the level of Common European Framework of Reference. At Ami: Understanding clearly what is spoken about everyday situations which a student meets at school or in insher free terms and anguages. Or Student Exchange Programs to Indonesian Languages for Student Exchange Programs to Indonesian 2.2 AZX	2046084	French - Beginners	Z	2
2246666 Franch - Beginners' Course Mayaded to the level of Common European Francework of Meteronex At Aim: Understanding already what is appoten about everyday situations which a Stationd or in insider free time and speaking about them: Writing in a simple way about damilior topics. Reading and comprehension of simple texts. Improvement of professional language. 2 2 3 3 3 4 6 6 6 6 7 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9			riting in a simple v	vay about familia
Aspect to the level of Common European Framework of Reference A. I Am. Understanding dearly what is applicen about everyday shuations which a student meets at school or in brisher free lime and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional languages is assisted informational analoraguage for Student Exchange Programs in Indonesian analoraguage for Student Exchange Programs in Indonesian analoraguage for Student Exchange Programs in Indonesian Record and Common Exchange Programs in Indonesian Record and Common Exchange Programs in Indonesian Record and Record Record and Record Record and Record Record and Record Reco	topics. Reading and o			_
insher free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language, 22 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2046085		_	
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Airn: 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 4			7	2
about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. 2 2 depped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school for the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school for the level of Common European Framework of Reference B1-B2. The aim: comprehension of spoken German as well as lectures given in German without great difficulties and active participation in a discussion. Written and or advise participation in a discussion. Written and or advised a studies on the student of studies without difficulties. Grammar structures on advanced level. 2 2 2 (advanced to texts from student's field of studies without difficulties. Grammar structures on advanced level. 2 2 2 (advanced to texts from student's field of studies without difficulties. Grammar structures on advanced level. 2 2 2 (advanced to the level of Common European Framework of Reference A2-B1 Understanding texts concerning currant issues and poutar scendific and technical articles. 2 3 2 4 (apoped to the level of Common European Framework of Reference A2-B1 Understanding standard speech about familiar topics, that a students comes across at work, at school, during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical texts. 2 3 2 (advanced to the level of Common European Framework of Reference A2-B1 Understanding standard speech about familiar traiters that a student meets at work, at school, during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical texts. 2 4 2 (apoped to the level of Common European Framework of Reference A2-B1 to the school of			_	1
Aspect to the level of Common European Framework of Reference A2 Amr. Understanding clearly spoken language about everyday situations which a student meets either at school row in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language. 2046083 German - Advanced Course Z 2 4 Suppose to the level of Common European Framework of Reference B1-B2 The aim: comprehension of spoken German as well as lectures given in German without great difficulties and active participation in a discussion. Written and real skills to advanced level. Ability to write a summary, a report, an essay. Reading and comprehension of popular-scientific and scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level. 2 2 2 2 2 2 2 2 2 2	_		g	
or in hisher free time and speaking about them. Writing in a simple way about familiar topics, reading and comprehesion of simple texts. Improvement of professional language. 2046083 German - Advanced Course Z 2 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 4 2 2 4 2 2 4 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 2 4 2 2 2 4 2	2046079	German - Lower Intermediate Course	Z	2
Querman - Advanced Course Z 2			ו ch a student meet	s either at schoo
Mapped to the level of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in German without great 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 comprehension of popular-scientific and scientific archiecter or texts from students is fell of studies without difficulties. Gamman structures on advanced level. 2 2 2 2046082	or in his/her free time	and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement	ent of professional	l language.
and active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension of popular-scientific and cainetific articles or texts from student's field of studies without difficulties. Grammar structures on advanced levels. 2046082 German - Advanced Course 20mprehension of spoken language as well as lectures in German on topics familiar to the student. 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. 2 2 2 (Aupped to the level of Common European Framework of Reference-X2 - B1 Understanding standard speech about familiar topics, that a students comes across at work, at school, during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these stopics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046078 German - Beginners 2046079 German - Beginners 2046070 German - Beginners	2046083	German - Advanced Course	Z	2
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German - Advanced Course German - Advanced Course Z 2 2 2 2 2 2 2 3 2 2			ehension of popu	lar-scientific and
Comprehension of spoken language as well as lectures in German on topics familiar to the student. 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. 2046081 German - Upper Intermediate Course Z 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 2 3	scientific articles or te			-
2046081 German - Upper Intermediate Course Wapped to the level of Common European Framework of Reference-A2 - B1 Understanding standard speech about familiar topics, that a students comes across at work, at school, during free time, and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding general and technical texts. 2046080 German - Upper Intermediate Course Understanding standard speech about familiar matters that a student seet to experiences and events, explain one's opinions and plans. Reading and understanding general and technical texts. 2046076 German - Beginners Water of German - Water of German - Beginners Water of German - Water of German - Water of German - Water of German - Water of	2046082		. –	
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Presentations in French language Z 2 Preparation for presenting technical topics in French, possibly in cooperation with specialized departments. 2046165 Presentations in Spanish Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. 2046137 Russian - Lower Intermediate Course 2046139 Independent of special	2046164	Presentations in Russian	Z	2
Preparation for presenting technical topics in French, possibly in cooperation with specialized departments. 2046165 Presentations in Spanish Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. 2046137 Russian - Lower Intermediate Course 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 way about familia topics. Reading and comprehension of simple texts. Improvement of professional language. 2 2 Mapped to the level of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her	Preparation for prese	nting technical topics in Russian, possibly in cooperation with specialized departments.	'	•
Presentations in Spanish Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. Publication of Presenting technical topics in Spanish, possibly in cooperation with specialized departments. Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. Z 2 2 2 2 2 3 3 3 3 3 4 4 5 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2046163	Presentations in French language	Z	2
Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. 2046137 Russian - Lower Intermediate Course 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 familia opics. Reading and comprehension of simple texts. Improvement of professional language. 2046138 Russian - Lower Intermediate Course Mapped to the level of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her	Preparation for prese	nting technical topics in French, possibly in cooperation with specialized departments.	·	
Russian - Lower Intermediate Course Z 2	2046165	Presentations in Spanish	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 way about familia opics. Reading and comprehension of simple texts. Improvement of professional language. 2046138 Russian - Lower Intermediate Course Z Mapped to the level of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her	Preparation for prese	nting technical topics in Spanish, possibly in cooperation with specialized departments.		
opics. Reading and comprehension of simple texts. Improvement of professional language. 2046138 Russian - Lower Intermediate Course Z 2 Mapped to the level of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/he	2046137	Russian - Lower Intermediate Course	Z	2
2046138 Russian - Lower Intermediate Course Z 2 Mapped to the level of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/he	Understanding clearly	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. We	riting in a simple v	vay about familia
Mapped to the level of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a student meets at school or in his/he	topics. Reading and o			
	2046138		1	
ree time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	• •			

2046141	Russian - Advanced	Z	2
Comprehension of spo	n. Neen language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participati	ion in discussions.	Expressing
opinions. Written skills	. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te	echnical articles.	
2046142	Russian - Advanced	Z	2
Mapped to the level of	Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on t	opics familiar to th	e student.
Communication with n	ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading a	nd understanding	texts concerning
currant issues and pop	oular scientific and technical articles.		
2046140	Russian - Upper Intermediate	Z	2
Mapped to the level of	Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student r	neets at work, at s	school, during
free time, and talking	about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understa	ınding general and	technical texts.
2046139	Russian - Upper Intermediate	Z	2
Understanding standa	rd speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ity to describe exp	eriences and
events, briefly explain	one's opinions and plans. Reading and understanding general and technical texts.		
2046136	Russian - Beginners	Z	2
Mapped to the level of	Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understandi	ing and use of bas	sic expressions
of general scientific te	rminology (professional language)		
2046135	Russian - Beginners	Z	2
Basic vocabulary of ev	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	sional language)	
2046099	Spanish - Lower Intermediate	Z	2
Mapped to the level of	Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a stu	ident meets at sch	ool or in his/her
free time and speaking	g about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of profe	ssional language.	
2046098	Spanish - Lower Intermediate	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. Wr	iting in a simple w	ay about familia
topics. Reading and co	omprehension of simple texts. Improvement of professional language.		
2046096	Spanish - Beginners	Z	2
Aim:Understanding cle	early what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a sim	nple way about
familiar topics. Readin	g and comprehension of simple texts. Improvement of professional language.		
2046097	Spanish - Beginners	Z	2
Mapped to the Comm	on European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a	student meets at	school or in
his/her free time and s	peaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	guage.

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.	,	ı
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 relati	ons.	'
2011056	Mathematics I	Z,ZK	8
In the course, great	er emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connectio	ns between concep	ts. 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: of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.	eigennumbers and e	eigenvectors
2011062	Matematika II.	Z.ZK	8
	watermatika 11. set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen	1 '	_
	; cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree e of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vect Gauss-Ostrogradskij theorem.	•	
2012037	Computer Graphics	KZ	3
2016007	Mathematics I Seminar	Z	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 relati	ons.	'
201A056	Mathematics I.A	ZK	4
ı	Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable	1	'
201A062	Mathematics II.A	ZK	4
Open and closed s	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differen	tial operators div (d	livergence)
and curl (rotation). F	unction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,	Fubini theorem. Tra	ınsformatio
0 1	; cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gree e of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vect Gauss-Ostrogradskij theorem.	•	
2021025	Physics II.	Z,ZK	4
Faraday's law of elec	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of eleatter. Photoelectric effect. Wave-particle matter of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	ctromagnetic waves d periodic system of	nteraction delements.

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.	Z,ZK	7
-	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	-	
	echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co ic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire		
ou.u.o.ougo.	measurements of 11 various experiments related to the lectures.	orouou. ooo,	.09.000.01.,
2026016	Physics - Seminar	Z	2
	The subject is mainly meant for high-school students for repetition of high-school physics.		
202A041	Physics I. namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	ZK	Oscillations
-	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Aigid body. Continuum, elastic pro- echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	-	
	ic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire		
	measurements of 11 various experiments related to the lectures.		
2041061	English-Bachelor Exam	Z,ZK	2
Mapped to the Con	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ies, to take part in	aiscussions,
2041062	German - Bachelor Exam / FME	Z,ZK	2
	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult		1
	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 Con	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ies, to take part in	discussions,
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2
Mapped to the Con	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult		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	discussions
Mapped to the Con	nmon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ies, to take part in	uiscussioris,
2046068	English - Beginners	Z	2
Aim: Basic voo	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	age). A1
2046069	English - Beginners	Z	2
Mapped to the Cor	nmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding of general scientific terminology (professional language).	g and use of basic	expressions
2046070	English - Lower Intermediate	Z	2
	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	1
	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	7	2
	d language skills taking into consideration professional English and common professional terminology. Comprehension of standard En	glish speech and o	1
	about topics of everyday life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2		
2046073	English - Upper Intermediate	Z	2
	ommon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedi		
	knowledge.		33
2046074	English - Advanced	Z	2
·	hension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Written		
level. Ability to wr	ite a summary, a report, an essay. reading and comprehension of popular-scientific and scientific articles or texts from student's field Grammar structures on advanced level. B1 - B2.	of studies without	aimcuities.
2046075	English - Advanced	Z	2
	ommon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in En	glish without great	difficulties
and active particip	pation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and comprehen	nsion of popular-so	cientific and
2046076	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	Z	2
	German - Beginners If everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession		1
,	the Common European Framework of Reference for Languages A1.	33.,	
2046077	German - Beginners	Z	2
Mapped to the lev	rel Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an	d use of basic exp	ressions of
2046078	general scientific terminology (professional language). German - Lower Intermediate Course	Z	2
	German - Lower Intermediate Course g clearly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking about	_	1
	about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046079	German - Lower Intermediate Course	Z	2
	el of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a		
2046080	e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvemen German - Upper Intermediate Course	T of professional is	anguage.
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	_	1
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046081	German - Upper Intermediate Course	Z	2
	rel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students comend talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandin		
Same noo tiine, al	Laming account and to topics. The control of th	.5 gonorar and let	

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		l
	Nritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific		
2046083	German - Advanced Course	Z	2
	l of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in G		l
	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehe	•	
and active participa	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	rision of popular-sc	JEHIIIC AHU
2046084	French - Beginners	7	2
	,	_	l
Understanding clea	urly 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 iamiliar
004000	topics. Reading and comprehension of simple texts. Improvement of professional language.		
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	ırly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writinç	j in a simple way al	bout familiar
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046087	French - Lower Intermediate Course	Z	2
Mapped to the lev	el of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a	student meets at s	chool or in
his/her free tim	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	nguage.
2046088	French - Upper Intermediate	Z	2
Understanding sta	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi-	ences and
J	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 con		
	and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandi		
_		Tig general and tec	
2046090	French - Advanced		2
	of spoken language as well as lectures in French 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		
2046091	French - Advanced	Z	2
	evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	-	
Communication wit	h native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	inderstanding texts	concerning
	currant issues and popular scientific and technical articles.		
2046096	Spanish - Beginners	Z	2
Aim:Understandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046097	Spanish - Beginners	Z	2
Mapped to the C	ommon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a	student meets at so	hool or in
	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046098	Spanish - Lower Intermediate	7	2
	rrly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	_	-
on a crotain and grown	topics. Reading and comprehension of simple texts. Improvement of professional language.	, a cp.oa, a.	oour iaiiiiai
2046099	Spanish - Lower Intermediate	Z	2
	Spanish - Lower Intermediate of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer		l
	nd speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of		
		Jolessional langua	
2046117	Czech -Advanced	<u>Z</u>	2
	spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	-	ng opinions.
	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
	l of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec		
active participati	on in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	ion of popular-scie	entific and
	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	т	ı
2046119	Czech Language for Beginners I.	Z	2
Basic voca	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	ge)
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Con	mon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understandin	g and use of basic	expressions
	of general scientific terminology (professional language).		
2046125	Czech Lower Intermediate	Z	2
	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046126	Czech Lower Intermediate	Z	2
	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.		l
22	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	. J 2. 0p10	.,
2046127	Czech - Upper Intermediate	Z	2
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability		ļ.
onderstanding St	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	to describe experie	onicos anu
0040400		7	0
2046128	Czech - Upper Intermediate	Z	2
	nmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	-	
terminology. Com	aprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm	ieulale level. Broad	iening the
0010155	knowledge technical language.		_
2046135	Russian - Beginners	Z	2
Basic voca	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	ge)

2046136	Russian - Beginners	Z	2
Mapped to the leve	el of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	and use of basic e	xpressions
	of general scientific terminology (professional language)		
2046137	Russian - Lower Intermediate Course	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	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
	of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a studer		
	nd speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of p		
2046139	Russian - Upper Intermediate	Z	2
Understanding sta	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.	to describe experie	ences and
2046140		7	0
2046140	Russian - Upper Intermediate rel of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me	_	2
	ng about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understanding		- 1
2046141	Russian - Advanced	7	2
	ן of spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participation	n in discussions F	
	Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a		1
2046142	Russian - Advanced	7	2
	evel of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian 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.	J	J 3
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.	- '	_
2046161	Presentations in English	Z	2
2010101	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.	- 1	_
2046162	Presentations in German	Z	2
	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.	_	_
2046163	Presentations in French language	Z	2
2010100	Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.	- 1	_
2046164	Presentations in Russian	Z	2
2010101	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.	- 1	_
2046165	Presentations in Spanish	Z	2
2010100	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.	- 1	_
2046166	Presentations in Czech	Z	2
2010100	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departments	1	_
2131002	Engineering Design II	Z,ZK	4
	PS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface		•
	ps, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	-	
2141204	Introduction to Electrical Engineering for Technology	Z,ZK	4
	ical circuits, analysis of electrical circuits as DC and AC. El. Power and Energy. Principle and typical parameters diodes, transistors, t		amplifiers.
Analogue and	digital circuits. AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Transformer. Induction machines	s. Synchronous ma	chines.
	DC-machines		
2144062	Technical Indonesian - Course II.	Z,ZK	3
	Basic of Indonesian Language for Student Exchange Program to Indonesia		
2146060	Indonesian Language Course for Exchange	Z	2
	Basic of Indonesian Language for Student Exchange Program to Indonesia		
2146061	Technical Indonesian - Course I.	Z	2
	Second part of Indonesian Language for Student Exchange Program to Indonesia		
2182019	Chemistry	KZ	3
	y from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties		
phase equilibrium	n, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher	mistry. Laboratory p	practice is
	oriented upon the material properties measurement.		
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		processing,
0004007	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materi		
2321067	Technical Application of Materials	Z,ZK	5 The subject
	ıplikovatelnost jednotlivých skupin inženýrských materiálů a jejich odpovídající vlastnosti. Rovněž se věnuje aktuálním vývojovým treno bes applicability of specific engineering material types and their characteristics. It deals with the current development trends in these	•	THE SUDJECT
			2
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 erials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, ir	-	
2322091	Project	KZ	2
	preliminary submission of a bachelor thesis the students, under supervision of their supervisors, prepare a review summarizing and e		
	mphasis on experimental technologies which can be applied in their bachelor theses. They can also mention a planned experiment o	-	
	knowledge or results.		

2331068	Technology I.	Z,ZK	5
Foundry properties	of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of form		mi-products,
	heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatment	.S.	
2331071	Automation of Production Processes	Z,ZK	5
Automation of basic	c technological processes - casting, welding, forming and finishing. Facilities and equipment required to automate offices. Mechanizat	ion and automatior	n in iron and
steel foundries. A	utomation and robotics of die casting process, including other peripherals. Designing and programming of robotic welding centers. De	signing and progra	amming of
	robotic workstations for sheet metal forming. Design of automated forging cells. Design of automated finishing lines.		
2332091	Project	KZ	2
2333017	Surface Treatment	Z	3
	e surface treatments - branch signification and objects. Principles of corrosion, types and corrosion distribution. Anticorrosive preventi		
anticorrosive prev	rention. Corrosion testing. Surface pre-treatment. Converse coatings, enamels. Inorganic coatings, electroplating, hot-dip galvanizing.	Organic coatings.	Ecological
222222	aspects of surface treatments.		
2333038	Fundamentals of Technology I.	Z	3
· ·	ses in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technology of engineering productions. The state of the sta		1
	sting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming tech		
Free and drop to	orging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of welk welding and arc welding with coated electrodes. Thermal cutting.	ilig. Fusion weldir	ig. Flattie
2341001	Metrology	Z,ZK	5
	ion into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secc		_
	ordinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface struct	•	
, _, ond o oo	Measurement automatisation.	2.0 .0ug000,	
2341002	Cutting tools	Z,ZK	4
	racteristics. Cutting materials including heat treatment and surface finish, application fields. Cutting tool geometry, determination and		
•	Cutting tools design including dimensioning. Cutting tools production. Basic tools groups description and their use (turning tools, milli		·
· ·	tools. Grinding, use and maintenance of cutting tools.		· ·
2341014	Technology II.	Z,ZK	5
mechanics of chip f	ormation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining econor	nics. Automation o	f processes,
	programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.		
2341068	Special machining technology	Z,ZK	5
Development of	f cutting material, cutting speed development and consequences on the properties of surface finish. Hard and precision machining, e	ngineering econon	nics and
ecology.Influence	e of surface layer and selecting methods of machining process parameters. New methods of abrasive machining, grinding of ceramics	3, grinding difficult-	materials.
Expert, adaptive a	and intelligent control systems, abrasive processes. Physical methods of machining, manufacturing methods and gear threading, finis	hing methods. Tec	hnology in
	the aerospace industries, automotive, energy and other areas.		
2341515	Manufacturing process planning	Z,ZK	4
=	urse in terms of learning outcomes and competences. The aim of the course is to acquaint students with modern approaches and method		
-	pard to minimization of material consumption and economic efficiency of the machining process. Next, introducing students to the des		
with respect to tech	nnical and organizational conditions. Further, the aim of the subject is to explain the issue of standardization of work with regard to the	e type of process a	and the type
00.40005	of performed activity.	1/7	
2342005	Quality Control	KZ	2
	ol terms, where is quality created, who is responsible for a quality. Basic statistical terms and distributions. Statistical methods: statist npling. Tools and methods for a quality assurance during product lifetime cycle. Standards 9 000 and 14 000, certification of quality or	•	i, statisticai
2342032			3
2342032	Automation of machine tool programming Utilizations of computer technique for preparation of NC programs for lathe and milling machinery. Utilizations of probes on CNC ma	KZ	3
0040004			
2342091	Project	KZ	2
00.40000	Work on specialized tasks.		
2343993	Bachelor thesis	Z	5
Sources of Informa	ation in the field. Databases and corporate literature. Normalization. Search activity. News from the field of engineering technology. Pr in laboratories. The principles of work safety in technological devices. Work on specialized tasks related to the focus of a the	-	n and work
0070041			2
2372041	Computer Support for Study ces students into creating technical and professional documents on computers or Web and into realizing technical computations with t	KZ	3
	al skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating techn		
2383001	Fundamentals of Law	Z	2 2
	pundamentals 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 provic		
	burces of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is n		- 1
-	ons, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.	-	
•	now some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relation		

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to prepare professional presentations and to understand basic structures between law and engineering