Study plan

Name of study plan: 17 86 90 00 BVES EKO 2012 K základ

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Manufacturing and Economy in Mechanical Engineering

Type of study: Bachelor combined

Required credits: 178
Elective courses credits: 0
Sum of credits in the plan: 178
Note on the plan: první pokus

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 167

The role of the block: P

Code of the group: 12B-KMEN* VES

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

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

Credits in the group: 50 Note on the group:

Note on the gro	oup.					
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna, Jan Sko ilas Radek Šulc Radek Šulc (Gar.)	KZ	3	2P+1C	1	Р
2021041	Physics I.	Z,ZK	7	4P+1L	*	Р
2011021	Constructive Geometry Ivana Linkeová	Z,ZK	6	3P+2C	*	Р
2011056	Mathematics I Radka Keslerová, Marta Hlavová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Nikola Pajerová, Petr Louda, Lukáš Hájek, Radka Keslerová Gejza Dohnal (Gar.)	Z,ZK	8	4P+4C	*	Р
2011062	Matematika II. Radka Keslerová	Z,ZK	8	4P+4C	*	Р
2322029	Materials Science I. Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Lucie Pilsová, Jana Sobotová Jana Sobotová (Gar.)	KZ	3	2P+1L	2	Р
2012037	Computer Graphics Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka Ivana Linkeová	KZ	3	1P+1C	*	Р
2372041	Computer Support for Study	KZ	3	1P+1C	*	Р
2132001	Engineering Design I. Karel Petr	KZ	2	1P+2C	1	Р
2131002	Engineering Design II Martin Dub, Jan Flek, Martin Havlí ek, Jan Kanaval, Karel Petr, Marek Štádler, Jan Hoidekr Karel Petr Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Р
2131005	History of Technology	ZK	3	2P+0C	1	Р

Characteristics of the courses of this group of Study Plan: Code=12B-KMEN* VES Name=01 2012 souhrn 12B**1P-KMEN a 12B**2P-KMEN

2182019 Chemistry

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

oriented upon the material properties measurement.

2021041	Physics I.	Z,ZK	7
Kinematics and dyna	mics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, ela	stic properties of bodie	es. Oscillations,
waves. Fluid mechan	cs. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance.	Conductors, semicono	ductors,
insulators. Magnetic t	ield. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and	indirect measuremen	ts, regression,
measurements of 11	various experiments related to the lectures.		
2011021	Constructive Geometry	Z,ZK	6
The subject is focuse	d on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.		
2011056	Mathematics I	Z,ZK	8
In the course, greate	emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and contractions of the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of basic relationships and contract the concepts discussed and on the derivation of the concepts discussed and d	nections between con-	cepts. Students
will also get to know th	ne procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic a	reas: eigennumbers ar	nd eigenvectors
of a matrix, Taylor po	ynomial, integral as a limit function, integration of some special functions.		
2011062	Matematika II.	Z,ZK	8
Open and closed set	boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Diff	erential operators div	(divergence)
and curl (rotation). Fu	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) in	tegral, Fubini theorem.	Transformation
of integrals to polar, of	ylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and	Green's theorem. A p	otential vector
	f a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a	vector field through a	surface. The
Gauss-Ostrogradskij	theorem.		
2322029	Materials Science I.	KZ	3
	tate of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects,	•	
fracture of materials,	structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations	s, iron-carbon phase d	liagram.
2012037	Computer Graphics	KZ	3
2372041	Computer Support for Study	KZ	3
The course introduce	s students into creating technical and professional documents on computers or Web and into realizing technical computation	s with the use of comp	uters. Students
gain practical skills by	r creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating techni	cal-based WWW page	Э.
2132001	Engineering Design I.	KZ	2
Basic of technical rep	resentation, dimensioning and tolerancing	·	
2131002	Engineering Design II	Z,ZK	4
Principles of ISO GP	6 (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, s	urface texture, geome	trical tolerance,
dimensional loops, to	lerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice	their knowledge from	lectures.
2131005	History of Technology	ZK	3
Developement of hur	nan knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Emphas	is is given upon new b	oranches of
technology with spec	al attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine industry in t	he narrower sense of	the word.

Code of the group: 12B*K*P-ZT12

Name of the group: 04 2012 kombinované ZT v po adí 12

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

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

Credits in the group: 6 Note on the group:

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
K333038	Fundamentals of Technology I.	Z	3	8B	*	Р

Characteristics of the courses of this group of Study Plan: Code=12B*K*P-ZT12 Name=04 2012 kombinované ZT v po adí 12

K333038	Fundamentals of Technology I.	_l Z	3
Production processes in	engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, ter	chnical metals. Pr	roduction of pig
iron and steel. Casting:	nodeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming to	echnology. Hot an	nd cold forging.
Free and drop forging F	olling Production of nines. Bulk and sheet metal forming Walding technology. The characteristics of the various types of we	Idina Fusion well	ding: Flame

welding and arc welding with coated electrodes. Thermal cutting.

Code of the group: 12BVK3P

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

Requirement credits in the group: In this group you have to gain 30 credits

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

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2021025	Physics II.	Z,ZK	4	1P+2L	3	Р
2011009	Mathematics III Radka Keslerová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Tomáš Neustupa, Stanislav Kra mar Stanislav Kra mar (Gar.)	Z,ZK	5	2P+2C	*	Р

2311004	Mechanics for Technology	Z,ZK	7	4P+2C	*	Р
2321039	Materials Science II. Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Jan Walter, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Stanislav Krum Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
K331068	Technology I Bohumír Bedná	Z,ZK	5	16B	*	Р
2121023	Thermodynamics	Z,ZK	5	3P+2C	*	Р

2021025	Physics II.	Z,ZK	4
Faraday's law of ele	electromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics and $\dot{\phi}$	otics. Quantum properties of electromagnetic v	waves. Interactio
of radiation with m	matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle	s's motion. Hydrogen atom and periodic syste	m of elements.
Spectra, x-rays, ;la	laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laborate	ories - measurements of 6 experiments relate	ed to the lectures
2011009	Mathematics III	Z,ZK	5
An introductory co	course in ordinary differential equation and infinite series.	·	
2311004	Mechanics for Technology	Z,ZK	7
2321039	Materials Science II.	Z,ZK	4
	Materiale Colorido III	2,21	
	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin	1 ,	nical processing
Fundamentals of n	I control of the second of	ned chemical and thermal and thermo-mecha	nical processing
Fundamentals of n	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin	ned chemical and thermal and thermo-mecha	nical processing
Fundamentals of natechnical iron-carb	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin rbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of m	ned chemical and thermal and thermo-mecha naterials.	5
Fundamentals of natechnical iron-carbox K331068 Foundry properties	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin rbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials Technology	ned chemical and thermal and thermo-mecha naterials. Z,ZK stic deformation. Division of forming processe	5
Fundamentals of natechnical iron-carbox K331068 Foundry properties	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin rbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of matalloys Technology Techn	ned chemical and thermal and thermo-mecha naterials. Z,ZK stic deformation. Division of forming processe	5
Fundamentals of n technical iron-carb K331068 Foundry properties heating-up. Cutting 2121023	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin rbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of matallar Technology I es of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plang. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatment.	ned chemical and thermal and thermo-mechan naterials. Z,ZK stic deformation. Division of forming processement. Z,ZK	5 s. Semi-products
Fundamentals of natechnical iron-carb K331068 Foundry properties heating-up. Cutting 2121023 The course deal w	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin rbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of material Technology I es of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plang. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatmath Thermodynamics	ned chemical and thermal and thermo-mechan naterials. Z,ZK stic deformation. Division of forming processement. Z,ZK cough nozzles and diffusers. Basic concepts a	5 s. Semi-products 5 and principles ar
Fundamentals of natechnical iron-carbon K331068 Foundry properties heating-up. Cutting 2121023 The course deal was introduced, and the	f metallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combin rbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of material Technology I es of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plang. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatmate Thermodynamics with a basic engineering approach to classical thermodynamics, heat transfer and compressible flow three transfer and compressible flow thre	ned chemical and thermal and thermo-mechan naterials. Z,ZK stic deformation. Division of forming processement. Z,ZK cough nozzles and diffusers. Basic concepts an ideal mixtures are studied with an emphasis of	5 s. Semi-products 5 and principles aron psychometrics

Code of the group: 12BVK4P

Name of the group: 09 2012 BVES 4.sem kombi 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
2381075	Enterprise Management and Economics	Z,ZK	5	2P+2C	4	Р
2383102	Personnel Management Jan Horejc	Z	2	2P+1C	*	Р
2342005	Quality Control Jan Podaný	KZ	2	1P+1C+1L	*	Р
K341014	Technology II. Pavel Novák	Z,ZK	5	8KP+8KC	*	Р

Characteristics of the courses of this group of Study Plan: Code=12BVK4P Name=09 2012 BVES 4.sem kombi povinné

2381075	Enterprise Management and Economics	Z,ZK	5				
2383102	Z	2					
Personnel / human reso	Personnel / human resource management is concerned with the effective management of people at work. Subject examines what can or should be done to make people both more						
productive and more sat	isfied with their working life. Its goal is to help develop more effective managers and staff specialists who work directly with the l	numan resources	of organizations.				
2342005	Quality Control	KZ	2				
Basic quality control teri	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	sampling. Tools and methods for a quality assurance during product lifetime cycle. Standards 9 000 and 14 000, certification of quality control systems.						
K341014	Technology II.	Z,ZK	5				

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
2131519	Machine Elements for Technology Martin Dub, Martin Havlí ek, Jan Kanaval, Eliška Cézová, Zden k ešpíro, František Lopot, Roman Uhlí, Ji í Houkal, Ond ej Što ek František Lopot František Lopot (Gar.)	Z,ZK	5	2P+3C	*	Р
2381068	Cost Accounting Theodor Beran, Ladislav Vaniš Theodor Beran Theodor Beran (Gar.)	Z,ZK	5	2P+2C	*	Р
2141204	Introduction to Electrical Engineering for Technology Jan Chyský, Lubomír Musálek, Martin Novák Lubomír Musálek Jan Chyský (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р

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

2131519	Machine Elements for Technology	Z,ZK	5
2381068	Cost Accounting	Z,ZK	5

The subject presents an introduction to the problems of value management as the enterprise on the whole and its parts - centres - by means of budgeting (expected cost), so the individual achievements (intermediate products, products, services) - by means of preliminary costing (expected costs) and actual costing (actual costs). Emphasis is laid on the relation of costs on the whole - enterprise costs - to the costs of individual achievements and the understanding of the transformation from costs in the budgeting and accounting structure (individual cost items) into the costing structure (direct and overhead costs), and fixed and variable costs. There are taught conventional and also modern approaches in costing. The subject Cost Accounting is connected directly with the subject Accounting and represents an introduction to the problems of cost allocation to separate products, which are compared with the market price and finding out as their profitability, so their acceptability or unacceptability manufacturing program.

Introduction to Electrical Engineering for Technology

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 leads students to know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relationships and to make them ready to prepare professional presentations and to understand basic structures between law and engineering

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

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

Requirement credits in the group: In this group you have to gain 18 credits

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

Credits in the group: 18 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
2381514	Project management	Z,ZK	4	2P+2C	*	Р
2381059	Industrial Marketing Št pánka Uli ná Št pánka Uli ná (Gar.)	Z,ZK	5	3P+1C	*	Р
2381504	Accounting Theodor Beran Theodor Beran (Gar.)	Z,ZK	4	2P+2C	*	Р

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

2381514	Project management	Z,ZK	4
2381059	Industrial Marketing	Z,ZK	5
2381504	Accounting	Z,ZK	4

The objective of the subject is to become acquainted with the significance of accounting for enterprise management, with the content and formal structure and realization of the stages and changes of the economic results during the accounting period; further with accounting as a system needful for tax declaration and not least as a resource to financial analysis. The stress is laid on understanding the dichotomy as the basis of the double entry accounting system, which distinguishes the terms assets (in the long term and short term) and liabilities (share-holders? equity, liabilities). Of great importance is the assessing of assets and their parts. Ac-counting relates to other information subsystems as budgeting, cost accounting, short term and long term planning. There are further some other subjects concerning enterprise manage-ment, connected with accounting, especially in the field of financial management. Accounting is one of the fundamental instrument of a business manager who understands the content and structure of the balance sheet, profit and loss account and the cash/flow statement. It is very possible that some of the students will exploit the knowledge of accounting in their future occupation as managers, financial directors, in consulting firms and auditing companies.

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 Jaroslav ervený, Aleš Herman, Ladislav Kola ík, Viktor Kreibich, Ji í Kucha, Vít Novák, František Tatí ek Aleš Herman Aleš Herman (Gar.)	Z,ZK	5	3P+2C	*	Р
2381098	Enterprise Finance František Freiberg František Freiberg (Gar.)	Z,ZK	4	2P+2C	*	Р
2382048	Statistical and Decision Analysis Barbora Stieberová Barbora Stieberová (Gar.)	KZ	4	2P+1C	*	Р

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

Automation of Production Processes

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

2381098 | Enterprise Finance | Z,ZK | 4
The subject Financing of the Enterprise provides a broad-based introduction to financial management. Students have an opportunity to acquire an understanding of the main con-cepts

and their practical application in decision-making. Students gain knowledge of financial management role within a business, financial ratios, nature and purpose of projected financial statements and their role in the development of future plans for a business and in the assessing the impact of management decision on the performance and position of a business, factors which must be taken into account when managing the working capital of a business, various aspects of financing the business through external and internal sources of finance available to a business, ways how business can make decision and evaluation involv-ing investments in new technology, and various aspects of mergers and takeovers.

2382048 Statistical and Decision Analysis KZ 4

Statistical analysis is a good basis for a creation of decision-making models. The goal of this subject is to teach students to apply the selected statistical method, to apply models of decision analysis, to create models for the management of industrial enterprises.

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

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

Requirement credits in the group: In this group you have to gain 21 credits

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

Credits in the group: 21 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
2383993	Bachelor Thesis Ladislav Vaniš, Barbora Stieberová, Jan Lhota František Freiberg František Freiberg (Gar.)	Z	5	0P+6C	*	Р
2381712	Managerial Counting Miroslav Žilka	Z,ZK	4	2P+2C	*	Р
2381174	Enterprise Information Systems Vladimír Brdek	Z,ZK	4	2P+2C	*	Р
2381107	Engineering Ergonomy Ladislav Vaniš Jan Horejc (Gar.)	Z,ZK	4	2P+2C	*	Р

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

2383993	Bachelor Thesis	Z	5				
Work on specialized tasks related to the focus of a thesis.							
2381712	Managerial Counting	Z,ZK	4				

The course is oriented to project management approach. During the course are solved cases that respond to practical situations. The cases are stressed on cost-returns calculations, on the solving interactions among costs, capacity of resources and the price. And also on the calculation typical kinds of variations and their explanation and the selection of the appropriate managerial decision. The students are concerning on the right way of operational budget creation and assessment. The link on the internal company accounting is shown and explain. The computerized models are used by explanation.

	, 1		
2381174	Enterprise Information Systems	Z,ZK	4
2381107	Engineering Ergonomy	Z,ZK	4

The aim of the subject engineering ergonomics is to become acquainted with the problems, constraints and the optimal solution of the fundamental unit of an enterprise or organization, i.e. with system - man - technology (machine) - environment. The character of the subject is going out from the anthropocentric principle, i. e. that every system MTE as in the manufacturing, managing, technological, designing so in other spheres it is important unambiguously to accommodate them to the possibilities, abilities and skills of the weakest link - that is to the given man. The students will learn not only to start from the man?s limitations during the designing of the MTE system, but also evaluate the existing economic level of the system and design rationalization measures for its optimization. The mission of the subject is that the students will be able in their work on all levels of economic spheres to ensure the optimal wellbeing for themselves and for the users of the designed systems as well as for their subordinates. The not-excludable output is also the health of man and higher quality and productivity of labour.

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 11

The role of the block: PV

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

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

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

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

Credits in the group: 2

Note on the group:

Ze skupiny humanitních předmětů nutno j e d e n absolvovat

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2383019	Philosophical Issues Of Individual and Science	Z	2	1P+1C	*	PV
2383009	Communication and Dealing with People Jan Horejc Jan Horejc (Gar.)	Z	2	1P+1C	*	PV
2383008	Managerial Psychology	Z	2	1P+1C	*	PV

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

2383019 Philosophical Issues Of Individual and Science Z 2

2383009 Communication and Dealing with People
Human communication represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (with specific modifications) to

the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.

2383008 Managerial Psychology Z 2

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

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

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

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

Credits in the group: 2 Note on the group:

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

Characteristics of the courses of this group of Study Plan: Code=12BV*4Q-BZJ VES Name=11 2012 bakalá ské zkoušky z jazyk pro VES

2041061 | English-Bachelor Exam | Z,ZK | 2 | Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.

2041063 French - Bachelor Exam /FME Z,ZK 2
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions,

to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level

2041062 | German - Bachelor Exam / FME | Z,ZK | 2
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions,

Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.

2041065 Russian - Bachelor Exam / FME

Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.

2

Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions, to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.

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

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

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

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

Credits in the group: 5 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2321067	Technical Application of Materials Stanislav Krum	Z,ZK	5	3P+1C	*	PV
2381002	Fundamentals of Economics Theodor Beran Theodor Beran (Gar.)	Z,ZK	5	2P+2C	*	PV

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

Sharacteristics of the courses of this group of Study Plan. Code=12BV 4Q-2AM Name=10 2012 BVES 4.Sem Zam Tpovvoi						
2321067	Technical Application of Materials	Z,ZK	5			
P edm t popisuje aplikovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým trend m t chto skupin. The subject						
describes applicability of	of specific engineering material types and their characteristics. It deals with the current development trends in these materials	s as well.				
2381002	Fundamentals of Economics	Z,ZK	5			
The course is focused on the following subjects: basic economic relations and consequences. Economic aggregates and their consequences. Operating of the economics according						
to so called macroekonomic circle, various economic theories. Consumption behaviour in microeconomics. Theory of production. Different markets and competitions.						

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

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

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

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

Credits in the group: 2 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2322091	Project Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Jakub Horváth, Stanislav Krum	KZ	2	0P+2C	*	PV
2382091	Specialization Project Ladislav Vaniš, Barbora Stieberová, Vladimír Brdek František Freiberg	KZ	2	0P+2C	*	PV
2332091	Project Jaroslav ervený, Aleš Herman, Ladislav Kola ík, Viktor Kreibich, Ji í Kucha, František Tatí ek, Bohumír Bedná, Barbora Bryksí Stunová, Jan ermák, Ladislav Kola ík Aleš Herman (Gar.)	KZ	2	0P+2C	*	PV
2342091	Project Vladislav Andronov, Libor Beránek, František Holešovský, Tomáš Kellner, Michal Koptiš, Ji í Kyncl, Martin Kyncl, Jan Mádl, Petr Mikeš, Pavel Novák	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

		—						
knowledge or results.								
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								
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								
2322091	Project	KZ	2					

2382091	Specialization Project	KZ	2
2332091	Project	KZ	2
2342091	Project	KZ	2
Work on specialized tas			

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 Ivana Linkeová	ZK	3	0P+0C	*	V
201A056	Mathematics I.A Radka Keslerová	ZK	4	0P+0C	*	٧
201A062	Mathematics II.A	ZK	4	0P+0C	*	V

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

202A041	Physics I.	ZK	3		
Kinematics and dynamics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic properties of bodies. Oscillations,					
waves. Fluid mechanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Conductors, semiconductors,					
insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression,					
measurements of 11 va	rious experiments related to the lectures.				

201A021	Constructive Geometry A	ZK	3	
The subject is focused	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 doporu ené seminá e

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

Credits in the group: 0

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

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

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

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

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

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

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

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

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

Credits in the group: 0

Note on the group:

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 Michele Le Blanc, Eliška Vítková, Ilona Šimice, Nina Procházková Ayyub Nina Procházková Ayyub Michele Le Blanc (Gar.)	Z	2	0P+2C	*	V
2046156	English Conversation Michele Le Blanc, Eliška Vítková, Ilona Šimice, Nina Procházková Ayyub Nina Procházková Ayyub	Z	2	0P+2C	L	V

2046071	English - Lower Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	L	V
2046070	English - Lower Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046074	English - Advanced Michele Le Blanc, Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046075	English - Advanced Michele Le Blanc, Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046072	English - Upper Intermediate Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	٧
2046073	English - Upper Intermediate Eliška Vitková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046068	English - Beginners Eliška Vitková, Michaela Schusová, Ilona Šimice, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046069	English - Beginners Eliška Vitková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	Z	2	0P+2C	L	V
2046126	Czech Lower Intermediate	Z	2	0P+2C	L	V
2046125	Jaroslava Kommová Czech Lower Intermediate		2	0P+2C	Z	V
	Jaroslava Kommová Czech -Advanced					-
2046118	Jaroslava Kommová	Z	2	0P+2C	L	V
2046117	Czech -Advanced Jaroslava Kommová	Z	2	0P+2C	Z	V
2046127	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046128	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046119	Czech Language for Beginners I.	Z	2	0P+2C		V
2046120	Jaroslava Kommová Czech Language for Beginners II.		2	0P+2C	1	
2046120	Jaroslava Kommová		2	UP+2C	L	V
2046086	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046087	French - Lower Intermediate Course Michaela Schusová, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046091	French - Advanced Michaela Schusová, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046090	French - Advanced Eliška Vítková, Michaela Schusová, Dušana Jirovská Eliška Vítková Eliška	Z	2	0P+2C	Z	V
2046089	Vítková (Gar.) French - Upper Intermediate	Z	2	0P+2C	L	V
2046088	Michaela Schusová, Dušana Jirovská Dušana Jirovská French - Upper Intermediate Eliška Vítková, Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Osc.)	Z	2	0P+2C	Z	V
2046084	Michaela Schusová (Gar.) French - Beginners Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046085	French - Beginners' Course Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (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 Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046079	German - Lower Intermediate Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Eliška Vítková	Z	2	0P+2C	L	V
2046083	German - Advanced Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Jaroslava Kommová	Z	2	0P+2C	L	V

2046082	German - Advanced Course Eliška Vitková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046081	German - Upper Intermediate Course Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Eliška Vítková	Z	2	0P+2C	L	V
2046080	German - Upper Intermediate Course Eliška Vitková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046076	German - Beginners Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046077	German - Beginners Eliška Vítková, Michaela Schusová, Jaroslava Kommová, Petr Laurich Eliška Vítková	Z	2	0P+2C	L	V
2046161	Presentations in English Eliška Vítková, Michaela Schusová, Ilona Šimice, Nina Procházková Ayyub Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	*	V
2046166	Presentations in Czech Eliška Vítková, Jaroslava Kommová, Petr Laurich Jaroslava Kommová Petr Laurich (Gar.)	Z	2	0P+2C	*	V
2046162	Presentations in German Eliška Vítková, Jaroslava Kommová, Petr Laurich Jaroslava Kommová Eliška Vítková (Gar.)	Z	2	0P+2C	*	V
2046164	Presentations in Russian Eliška Vítková, Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	*	V
2046163	Presentations in French language Eliška Vítková, Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	*	V
2046165	Presentations in Spanish Eliška Vítková Eliška Vítková	Z	2	0P+2C	*	V
2046137	Russian - Lower Intermediate Course Eliška Vitková, Michaela Schusová, Hana Volejníková, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046138	Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046141	Russian - Advanced Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046142	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046140	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046139	Russian - Upper Intermediate Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046136	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046135	Russian - Beginners Eliška Vítková, Michaela Schusová, Hana Volejníková, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	V
2046099	Spanish - Lower Intermediate Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková	Z	2	0P+2C	L	V
2046098	Spanish - Lower Intermediate Eliška Vítková, Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046096	Spanish - Beginners Eliška Vítková, Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046097	Spanish - Beginners Michaela Schusová, Jaime Andrés Villagómez Michaela Schusová, Jaime Andrés Villagómez	Z	2	0P+2C	L	V

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

kurzy a prezenta	ace		
2046155	English Conversation	Z	2
Improving communic	ative skills in speaking on general topics and general technical topics.		
2046156	English Conversation	Z	2
Improving communic	ative skills in speaking on general topics and general technical topics.		<u>'</u>
2046071	English - Lower Intermediate	Z	2
Mapped to the Comr	non European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which	a student meets	either at school
or at his/her free time	and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvement	ent of profession	al language.
2046070	English - Lower Intermediate	Z	2
Aim: Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a si	mple way about
familiar topics. Readi	ng and comprehension of simple texts. Improvement of professional language. A1 - A2.		
2046074	English - Advanced	Z	2
The aim: comprehen	sion of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writ	ten and oral skills	on advanced
level. Ability to write a	a summary, a report, an essay, reading and comprehension of popular-scientific and scientific articles or texts from student's fig	eld of studies with	out difficulties.

Grammar 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 E		
1 ' '	in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and comprel is from student's field of studies without difficulties. Grammar structures on advanced level.	nension of popular	r-scientific and
2046072	English - Upper Intermediate	Z	2
	guage skills taking into consideration professional English and common professional terminology. Comprehension of standard	_ ,	_
	y life - at school, at work, during free time, on intermediate level. Broadening grammar knowledge. A2 - B1.		
2046073	English - Upper Intermediate	Z	2
Mapped to the Commo	n European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional En	glish and common	professional
	nsion of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on interm	nediate level. Broad	dening grammar
knowledge.			
2046068	English - Beginners	Z	2
	of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p	7	age). A1
2046069	English - Beginners n European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	. – .	=
* *	minology (professional language).	ang and asc or be	asic expressions
2046126	Czech Lower Intermediate	Z	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a sin	nple way about
familiar 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 the	m. Writing in a sin	nple way about
	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 C discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehen	_	
	is from student's field of studies without difficulties. Grammar structures on advanced level.	sion of popular-sc	ientine and
2046117	Czech -Advanced	Z	2
	cen language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	. – .	=
1 '	write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical an	•	
2046127	Czech - Upper Intermediate	Z	2
Understanding standard	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ty to describe exp	eriences and
events, briefly explain of	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 professional		-
knowledge technical la	nsion of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter-	mediate level. Bro	adening the
2046119	Czech Language for Beginners I.	Z	2
	process Language for Degriniers 1. Bryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	. – .	2
2046120	Czech Language for Beginners II.	Z	2
Mapped to the Commo	n European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan	ding and use of ba	asic expressions
of general scientific terr	minology (professional language).		
2046086	French - Lower Intermediate Course	Z	2
	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	iting in a simple wa	ay about familiar
	mprehension of simple texts. Improvement of professional language.	7	
2046087	French - Lower Intermediate Course Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which	Z	2
1	peaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2046091	French - Advanced	Z	2
	Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to		
Communication with na	tive speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading ar	nd understanding t	exts concerning
currant issues and pop	ular scientific and technical articles.		
2046090	French - Advanced	Z	2
1 '	ken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participatio		Expressing
	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te		
2046089	French - Upper Intermediate	Z	2
1	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students on Iking about these topics. Ability to describe experiences and events, explain one´s opinions and plans. Reading and understa		
2046088	French - Upper Intermediate	7	2
1	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ty to describe exp	
I -	ne's opinions and plans. Reading and understanding general and technical texts.		
2046084	French - Beginners	Z	2
Understanding clearly v	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	iting in a simple wa	ay about familiar
	mprehension of simple texts. Improvement of professional language.		
2046085	French - Beginners´ Course	Z	2
	Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which		
2146060	peaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of Indonesian Language Course for Exchange		
	Indonesian Language Course for Exchange nguage for Student Exchange Program to Indonesia	Z	2
2146061	Technical Indonesian - Course I.	Z	2
	ian Language for Student Exchange Program to Indonesia	, <u>-</u> 1	-
2144062	Technical Indonesian - Course II.	Z,ZK	3
	nguage for Student Exchange Program to Indonesia	· · · · · · · · · · · · · · · · · · ·	

2046078	German - Lower Intermediate Course	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 sir	nple way about
	g and comprehension of simple texts. Improvement of professional language.		
2046079	German - Lower Intermediate Course	Z	2
1	Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which		
	and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	nt of professional	
2046083	German - Advanced Course	Z	2
1	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in		_
1 ' '	n in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compre	enension of popul	ar-scientific and
	ts from student's field of studies without difficulties. Grammar structures on advanced level.	7	2
2046082	German - Advanced Course ken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participati	Z	2 Everessing
1 '	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te		. Expressing
2046081	German - Upper Intermediate Course	7	2
	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students c	_	
	alking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa		
2046080	German - Upper Intermediate Course	Z	2
	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	ty to describe exp	eriences and
events, briefly explain of	one's opinions and plans. Reading and understanding general and technical texts.		
2046076	German - Beginners	Z	2
Basic vocabulary of eve	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	sional language)	
2046077	German - Beginners	Z	2
	ommon European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding	and use of basic	expressions of
	nology (professional language).		
2046161	Presentations in English	Z	2
	present in English on technical topics, with a possible co-operation with specialized departments.		
2046166	Presentations in Czech	Z	2
	give presentations in English on technical topics, with a possible co-operation with specialized departments.		
2046162	Presentations in German	Z	2
	ting technical topics in German, possibly in cooperation with specialized departments.		
2046164	Presentations in Russian	Z	2
	ting technical topics in Russian, possibly in cooperation with specialized departments.		
2046163	Presentations in French language	Z	2
	ting technical topics in French, possibly in cooperation with specialized departments.	_	
2046165	Presentations in Spanish	Z	2
	ting technical topics in Spanish, possibly in cooperation with specialized departments.	7	0
2046137	Russian - Lower Intermediate Course	Z	2
1	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wr mprehension of simple texts. Improvement of professional language.	iling in a simple w	ay about lamillal
2046138	Russian - Lower Intermediate Course	Z	2
	Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stu	_	_
1	about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of profe		
2046141	Russian - Advanced	Z	2
	ken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participati	1	
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	ne student.
	ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading an	nd understanding	texts concerning
	ular scientific and technical articles.		
2046140	Russian - Upper Intermediate	Z	2
1	Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student r		_
	bout these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understa		
2046139	Russian - Upper Intermediate d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	Z	2 orioneos and
1	o speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili one's opinions and plans. Reading and understanding general and technical texts.	ity to describe exp	enences and
2046136	Russian - Beginners	Z	2
	Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understandi	_	
1 '''	minology (professional language)		
2046135	Russian - Beginners	Z	2
	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profes	1	
2046099	Spanish - Lower Intermediate	Z	2
	Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a stu	dent meets at sch	ool or in his/her
	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
1	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 familiar
	mprehension of simple texts. Improvement of professional language.	T	
2046096	Spanish - Beginners	Z	2
1	arly 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 sin	ipie way about
	g and comprehension of simple texts. Improvement of professional language.	7	2
2046097	Spanish - Beginners In European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a	Z student meets at	2 school or in
1	peaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		

List of courses of this pass:

Code	Name of the course	Completion	Credits			
2011009	Mathematics III An introductory course in ordinary differential equation and infinite series.	Z,ZK	5			
2011021	Constructive Geometry	Z,ZK	6			
'	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation	ons.				
2011056	Mathematics I	Z,ZK	8			
_	er emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connection	-				
will also get to know 	the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: e of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.	igennumbers and e	igenvectors			
2011062	Matematika II.	Z,ZK	8			
	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different		_			
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						
	, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green	· · · · · · · · · · · · · · · · · · ·				
field, independend	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 vector	r field through a su	ırface. The			
2012037	Gauss-Ostrogradskij theorem. Computer Graphics	KZ	3			
2012037	Mathematics I Seminar	Z	2			
201A021	Constructive Geometry A	ZK	3			
201A021	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation		3			
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. Different	ial operators div (d	ivergence)			
` ′	function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,					
	; cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green	· · · · · · · · · · · · · · · · · · ·				
neia, independent	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 vector Gauss-Ostrogradskij theorem.	ir ileid trirough a st	mace. The			
2021025	Physics II.	Z,ZK	4			
	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of elec		-			
of radiation with m	atter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and	periodic system of	elements.			
	er. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiences.					
2021041	Physics I.	Z,ZK	7			
	amics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro chanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co					
	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire					
, and the second	measurements of 11 various experiments related to the lectures.	ŕ	,			
2026016	Physics - Seminar	Z	2			
	The subject is mainly meant for high-school students for repetition of high-school physics.					
202A041	Physics I.	ZK	3			
	amics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro chanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	•				
	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire					
oulutorormagnos	measurements of 11 various experiments related to the lectures.	or modeur omerne,	rog. cocion,			
2041061	English-Bachelor Exam	Z,ZK	2			
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ies, to take part in	discussions,			
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.					
2041062	German - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	ies, to take part in o	discussions,			
2041063	French - Bachelor Exam /FME	Z,ZK	2			
	mon 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.	,	,			
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Com	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ies, to take part in	discussions,			
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.					
2041065	Russian - Bachelor Exam / FME	Z,ZK	2 discussions			
iviapped to the Com	mon 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, io iakė pari IN (alocuosioris,			
2046068	English - Beginners	Z	2			
	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (p					
2046069	English - Beginners	Z	2			
Mapped to the Com	mon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	and use of basic	expressions			
	of general scientific terminology (professional language).					

			1
2046070	English - Lower Intermediate g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Z Writing in a simple	way about
7 am. Onderstandi	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	withing in a simple	, way about
2046071	English - Lower Intermediate	Z	2
Mapped to the Co	mmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a s	student meets eithe	er at school
	time and speaking about them. Writing in a simple way about familiar topics, reading and comprehension of simple texts. Improveme		
2046072	English - Upper Intermediate	Z	2
	d language skills taking into consideration professional English and common professional terminology. Comprehension of standard En	_	l
	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
Mapped to the Co	ommon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli	sh and common pi	rofessional
terminology. Comp	rehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on intermedi	ate level. Broadeni	ng grammar
	knowledge.		
2046074	English - Advanced	Z	2
	n hension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writter	n and oral skills on	advanced
•	ite a summary, a report, an essay reading and comprehension of popular-scientific and scientific articles or texts from student's field		
,	Grammar structures on advanced level. B1 - B2.		
2046075	English - Advanced	Z	2
	pommon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in Eng	_	1
	pation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay, reading and compreher		
and active particip	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	ision of popular-so	deriting and
0040070		7	0
2046076	German - Beginners	Z	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	roressional langua	
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
	general scientific terminology (professional language).		
2046078	German - Lower Intermediate Course	Z	2
Aim: Understandir	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.		
2046079	German - Lower Intermediate Course	Z	2
Mapped to the leve	of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a	ı student meets eith	er at school
	e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvemen		
2046080	German - Upper Intermediate Course	7	2
	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experi	ı
Ondorotanding of	arradia opodori about farilliar mattore triat a diagont mode at work, at obriod, daring mod time, and taking about tribod topics. Ability	to docorribo oxport	oriood aria
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts		
2046091	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	7	2
2046081	German - Upper Intermediate Course	Z	2
Mapped to the lev	German - Upper Intermediate Course rel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com	nes across at work,	, at school,
Mapped to the level during free time, and	German - Upper Intermediate Course rel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students come dalking about these topics. Ability to describe experiences and events, explain one so opinions and plans. Reading and understanding	nes across at work, ng general and tec	, at school, hnical texts.
Mapped to the level during free time, are 2046082	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students com nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandin German - Advanced Course	nes across at work ng general and tec Z	at school, hnical texts.
Mapped to the level during free time, are 2046082 Comprehension	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students come talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation	nes across at work ng general and tec Z n in discussions. E	at school, chnical texts. 2 expressing
Mapped to the level during free time, are 2046082 Comprehension opinions.	German - Upper Intermediate Course yel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students come and talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German 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 a	nes across at work ng general and tec Z n in discussions. E and technical articl	, at school, thnical texts. 2 xpressing es.
Mapped to the lev during free time, ar 2046082 Comprehension opinions.' 2046083	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German 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 a German - Advanced Course	nes across at working general and tec Z n in discussions. E and technical articl	, at school, chnical texts. 2 xpressing es. 2
Mapped to the level during free time, and 2046082 Comprehension opinions. 2046083 Mapped to the level	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation with the skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a German - Advanced Course el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in German.	nes across at working general and tec Z n in discussions. E and technical articl Z erman without grea	, at school, chnical texts. 2 xpressing es. 2 difficulties
Mapped to the level during free time, and 2046082 Comprehension opinions. 2046083 Mapped to the level	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation with the skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a German - Advanced Course el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in Geration in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension of spoken German and comprehension of	nes across at working general and tec Z n in discussions. E and technical articl Z erman without grea	, at school, chnical texts. 2 xpressing es. 2 difficulties
Mapped to the level during free time, are 2046082 Comprehension opinions. 2046083 Mapped to the level and active particip	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common described talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding the German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation with the skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a German - Advanced Course of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in German in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension of spoken German structures on advanced level.	nes across at work, ng general and tec Z n in discussions. E and technical articl Z erman without greansion of popular-so	, at school, thnical texts. 2 xpressing es. 2 at difficulties cientific and
Mapped to the level during free time, and 2046082 Comprehension opinions. 2046083 Mapped to the level	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participation with the skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a German - Advanced Course el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in Geration in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension of spoken German and comprehension of	nes across at working general and tec Z n in discussions. E and technical articl Z erman without grea	, at school, chnical texts. 2 xpressing es. 2 difficulties
Mapped to the level during free time, are 2046082 Comprehension opinions. 2046083 Mapped to the level and active participe 2046084	German - Upper Intermediate Course vel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students common described experiences and events, explain one's opinions and plans. Reading and understanding about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German 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 a German - Advanced Course el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in German in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension in a discussion in this/her free time and speaking about them. Writing arty what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	nes across at work, ng general and tec Z n in discussions. E and technical article Z erman without greansion of popular-so	, at school, thnical texts. 2 xpressing es. 2 at difficulties cientific and
Mapped to the level during free time, are 2046082 Comprehension opinions. Section 2046083 Mapped to the level and active participe 2046084 Understanding clean	German - Upper Intermediate Course rel of Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students come at talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding German - Advanced Course of spoken language as well as lectures in German 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 a German - Advanced Course el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in German in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehension in a discussion of structures on advanced level. French - Beginners arrly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing topics. Reading and comprehension of simple texts. Improvement of professional language.	nes across at work, ng general and tec Z n in discussions. E and technical article Z erman without greansion of popular-so	, at school, thnical texts. 2 xpressing es. 2 at difficulties cientific and 2 bout familiar
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2040000	Charich Designate	Z	2
2046096 Aim:Understandir	Spanish - Beginners ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	_
7	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	g a cp.c	nay about
2046097	Spanish - Beginners	Z	2
Mapped to the C	Common European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s	student meets at so	chool or in
his/her free tir	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lan	guage.
2046098	Spanish - Lower Intermediate	Z	2
Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	ງ in a simple way at	oout familiar
0040000	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046099	Spanish - Lower Intermediate el of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer	Z Z	2
	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of particles and speaking about them.		
2046117	Czech -Advanced	7	2
	spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	cussions. Expressi	
	en skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and t		
2046118	Czech -Advanced	Z	2
1	el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec	_	
active participat	ion in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	ion of popular-scie	ntific and
2040440	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	7	
2046119	Czech Language for Beginners I. abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	Z Z	2
2046120	Czech Language for Beginners II.	7	2
	mmon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	ا ہے۔ a and use of basic ہ	
	of general scientific terminology (professional language).	,	
2046125	Czech Lower Intermediate	Z	2
Aim: Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046126	Czech Lower Intermediate	Z	2
Aim: Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
2046427	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	7	2
2046127	Czech - Upper Intermediate tandard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	_	
Oriderstanding St	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	to describe experie	criocs and
2046128	Czech - Upper Intermediate	Z	2
Mapped to the Co	mmon European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Cz	ech and common p	orofessional
terminology. Cor	nprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on interm	nediate level. Broad	lening the
	knowledge technical language.		
2046135	Russian - Beginners	Z	2
	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	
2046136	Russian - Beginners rel of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding	and use of basic s	2
wapped to the lev	of general scientific terminology (professional language)	and use of basic e	хртеззіонз
2046137	Russian - Lower Intermediate Course	Z	2
	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing		
	topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046138	Russian - Lower Intermediate Course	Z	2
	el of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stude		
	and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	orofessional langua	
2046139	Russian - Upper Intermediate	<u> </u>	2
Understanding st	tandard 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	Russian - Upper Intermediate	Z	2
I .	vel of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me		
1	ing about these topics. Ability to describe experiences and events, briefly explain one s opinions and plans. Reading and understanding		_
2046141	Russian - Advanced	Z	2
Comprehension	of spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participatio	n in discussions. E	xpressing
	Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific	and technical article	
2046142	Russian - Advanced	Z	2
1	level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to	•	
Communication Wi	th 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.	muersianuing texts	concerning
2046155	English Conversation	Z	2
2070100	Improving communicative skills in speaking on general topics and general technical topics.	1 - 1	_
2046156	English Conversation	Z	2
	Improving communicative skills in speaking on general topics and general technical topics.	- 1	-
2046161	Presentations in English	Z	2
	Preparing students to present in English on technical topics, with a possible co-operation with specialized departments.	· '	·
2046162	Presentations in German	Z	2
	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.	· ·	

2046163	Presentations in French language Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.	Z	2
2046164	Presentations in Russian Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.	Z	2
2046165	Presentations in Spanish	Z	2
2046166	Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments. Presentations in Czech	Z	2
	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized department.		
ntroduced, and they a	Thermodynamics a basic engineering approach to classical thermodynamics, heat transfer and compressible flow through nozzles and diffusers. Ba re applied mostly to systems behaving as ideal gases or typical vapours. Basic notions associated with ideal mixtures are studied with s fundamentals of conduction, convection and radiation. Heat exchangers are treated as an engineering application. Exercises and problems and experimental technique.	an emphasis on ps	ychometric
2131002	Engineering Design II	Z,ZK	4
rinciples of ISO GPS	(Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	texture, geometric	al tolerand
2131005	History of Technology	ZK	3
	iman knowledge in the domain of science and technology in the retrospective of the developement of our civilization. Emphasis is		1
-	ecial attention to the contribution of mining, iron metallurgy, power engineering, transportation and of the machine industry in the		
2131519	Machine Elements for Technology	Z,ZK	5
2132001	Engineering Design I.	KZ	2
'	Basic of technical representation, dimensioning and tolerancing	1	
	Introduction to Electrical Engineering for Technology Il circuits, analysis of electrical circuits as DC and AC. El. Power and Energy. Principle and typical parameters diodes, transistors, ipital circuits. AC el. curcuits. Electrical power and energy. Calculation, measurement, power factor. Transformer. Induction machine DC-machines		
2144062	Technical Indonesian - Course II. Basic of Indonesian Language for Student Exchange Program to Indonesia	Z,ZK	3
2146060	Indonesian Language Course for Exchange Basic of Indonesian Language for Student Exchange Program to Indonesia	Z	2
2146061	Technical Indonesian - Course I. Second part of Indonesian Language for Student Exchange Program to Indonesia	Z	2
2182019	Chemistry	KZ	3
=	rom the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biochemical reactions, reactions are remained to the remaining properties are remained to the remaining properties.		-
2011221	oriented upon the material properties measurement.	7.71	
2311004	Mechanics for Technology	Z,ZK	7
2321039		Z,ZK hermo-mechanical	4
2321039 Fundamentals of meta 2321067 P edm t popisuje apli	Mechanics for Technology Materials Science II. allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and t	Z,ZK hermo-mechanical ials. Z,ZK d m t chto skupin	4 I processin 5 . The subje
2321039 Fundamentals of meta 2321067 P edm t popisuje apli describes 2322029 History and present	Mechanics for Technology Materials Science II. allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and t technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of mater Technical Application of Materials kovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým tren s applicability of specific engineering material types and their characteristics. It deals with the current development trends in these Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defo	Z,ZK hermo-mechanical ials. Z,ZK d m t chto skupin materials as well. KZ rmation, recrystalli	4 I processing 5 . The subje
2321039 Fundamentals of meta 2321067 Pedm t popisuje apli describes 2322029 History and present fracture of materia	Mechanics for Technology Materials Science II. allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and t technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of mater Technical Application of Materials kovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým tren s applicability of specific engineering material types and their characteristics. It deals with the current development trends in these Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defoals, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in	Z,ZK hermo-mechanical ials. Z,ZK d mt chto skupin materials as well. KZ rmation, recrystalli ron-carbon phase	4 I processing 5 The subje 3 ization and diagram.
2321039 Fundamentals of meta 2321067 P edm t popisuje apli describes 2322029 History and present fracture of materia 2322091 On the basis of the pro-	Mechanics for Technology Materials Science II. allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and t technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of mater Technical Application of Materials kovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým tren s applicability of specific engineering material types and their characteristics. It deals with the current development trends in these Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defo	Z,ZK hermo-mechanical ials. Z,ZK d mt chto skupin materials as well. KZ rmation, recrystalli ron-carbon phase KZ evaluating the stud	4 I processin 5 The subje 3 ization and diagram. 2 lied literatu
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2321039 Fundamentals of meta 2321067 P edm t popisuje apli describes 2322029 History and present fracture of materia 2322091 On the basis of the pro- with particular emp	Mechanics for Technology Materials Science II. allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of mater Technical Application of Materials kovatelnost jednotlivých skupin inženýrských materiál a jejich odpovídající vlastnosti. Rovn ž se v nuje aktuálním vývojovým tren sapplicability of specific engineering material types and their characteristics. It deals with the current development trends in these Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defo als, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in Project eliminary submission of a bachelor thesis the students, under supervision of their supervisors, prepare a review summarizing and chasis on experimental technologies which can be applied in their bachelor theses. They can also mention a planned experiment of knowledge or results. Automation of Production Processes echnological processes - casting, welding, forming and finishing. Facilities and equipment required to automate offices. Mechaniza mation and robotics of die casting process, including other peripherals. Designing and programming of robotic welding centers. D	Z,ZK hermo-mechanical ials. Z,ZK d mt chto skupin materials as well. KZ rmation, recrystalli ron-carbon phase KZ evaluating the stud or evaluate hitherto	4 I processin 5. The subje 3 ization and diagram. 2 lied literatu o obtained 5 on in iron ar
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of costs on the whole - enterprise costs - to the costs of individual achievements and the understanding of the transformation from costs in the budgeting and accounting structure (individual cost items) into the costing structure (direct and overhead costs), and fixed and variable costs. There are taught conventional and also modern approaches in costing. The subject Cost Accounting is connected directly with the subject Accounting and represents an introduction to the problems of cost allocation to separate products, which are compared with the market price and finding out as their profitability, so their acceptability or unacceptability manufacturing program. 2381075 **Enterprise Management and Economics** Z,ZK 5 2381098 **Enterprise Finance** Z,ZK 4 The subject Financing of the Enterprise provides a broad-based introduction to financial management. Students have an opportunity to acquire an understanding of the main con-cepts and their practical application in decision-making. Students gain knowledge of financial management role within a business, financial ratios, nature and purpose of projected finan-cial statements and their role in the development of future plans for a business and in the assessing the impact of management decision on the performance and position of a business, factors which must be taken into account when managing the working capital of a business, various aspects of financing the business through external and internal sources of finance available to a business, ways how business can make decision and evaluation involv-ing investments in new technology, and various aspects of mergers and takeovers. 2381107 **Engineering Ergonomy** The aim of the subject engineering ergonomics is to become acquainted with the problems, constraints and the optimal solution of the fundamental unit of an enterprise or organization, i.e. with system - man - technology (machine) - environment. The character of the subject is going out from the anthropocentric principle, i. e. that every system MTE as in the manufacturing, managing, technological, designing so in other spheres it is important unambiguously to accommodate them to the possibilities, abilities and skills of the weakest link - that is to the given man. The students will learn not only to start from the man?s limitations during the designing of the MTE system, but also evaluate the existing economic level of the system and design rationalization measures for its optimization. The mission of the subject is that the students will be able in their work on all levels of economic spheres to ensure the optimal wellbeing for themselves and for the users of the designed systems as well as for their subordinates. The not-excludable output is also the health of man and higher quality and productivity of labour. 2381174 **Enterprise Information Systems** Z,ZK 2381504 Z.ZK Accounting The objective of the subject is to become acquainted with the significance of accounting for enterprise management, with the content and formal structure and realization of the stages and changes of the economic results during the accounting period; further with accounting as a system needful for tax declaration and not least as a resource to financial analysis. The stress is laid on understanding the dichotomy as the basis of the double entry accounting system, which distinguishes the terms assets (in the long term and short term) and liabilities (share-holders? equity, liabilities). Of great importance is the assessing of assets and their parts. Ac-counting relates to other information subsystems as budgeting, cost accounting, short term and long term planning. There are further some other subjects concerning enterprise manage-ment, connected with accounting, especially in the field of financial management. Accounting is one of the fundamental instrument of a business manager who understands the content and structure of the balance sheet, profit and loss account and the cash/flow statement. It is very possible that some of the students will exploit the knowledge of accounting in their future occupation as managers, financial directors, in consulting firms and auditing companies. 2381514 Project management 2381712 Managerial Counting Z,ZK 4 The course is oriented to project management approach. During the course are solved cases that respond to practical situations. The cases are stressed on cost-returns calculations, on the solving interactions among costs, capacity of resources and the price. And also on the calculation typical kinds of variations and their explanation and the selection of the appropriate managerial decision. The students are concerning on the right way of operational budget creation and assessment. The link on the internal company accounting is shown and explain. The computerized models are used by explanation. 2382048 Statistical and Decision Analysis Statistical analysis is a good basis for a creation of decision-making models. The goal of this subject is to teach students to apply the selected statistical method, to apply models of decision analysis, to create models for the management of industrial enterprises. 2382091 ΚZ Specialization Project 2 Fundamentals of Law 2 Basic orientation in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provide a view into the Czech Legal Order, particular sources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is necessary for students to know our legal institutions, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws. At the same time the course leads students to know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relationships and to make them ready to prepare professional presentations and to understand basic structures between law and engineering 2383008 2 Managerial Psychology 2383009 Communication and Dealing with People Ζ 2 Human communication represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (with specific modifications) to the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently. 2383019 Philosophical Issues Of Individual and Science Ζ 2 Personnel Management 2383102 Personnel / human resource management is concerned with the effective management of people at work. Subject examines what can or should be done to make people both more productive and more satisfied with their working life. Its goal is to help develop more effective managers and staff specialists who work directly with the human resources of organizations. 2383993 **Bachelor Thesis** Ζ 5

Work on specialized tasks related to the focus of a thesis. Z,ZKK331068 5 Technology I

Foundry properties of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of forming processes. Semi-products, heating-up. Cutting. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brasing. Surface treatment.

Fundamentals of Technology I. Production processes in engineering production. Technology of engineering production. Materials in engineering. Concepts of steel and cast iron, technical metals. Production of pig iron and steel. Casting: modeling devices, molding materials, molding and castings. Foundry alloys. Overview of basic casting technology. Forming technology. Hot and cold forging. Free and drop forging. Rolling. Production of pipes. Bulk and sheet metal forming. Welding technology. The characteristics of the various types of welding. Fusion welding: Flame welding and arc welding with coated electrodes. Thermal cutting.

K341014 Technology II. Z,ZK 5

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