Study plan

Name of study plan: 10 62 67 00 BTZI 2012 P základ

Garantor of the st Program of study: Type of study: unl Required credits: Elective courses of Sum of credits in	uaranteed by the department: Welcome page sudy branch: Welcome page known full-time 220 credits: 0					
Name of the block	c: Compulsory courses in the program					
Minimal number of The role of the blo	of credits of the block: 210 ock: P					
Code of the group	۰. 12B*D*D_T\/					
0 1	p: 07 2012 bakalá ský t locvik					
5	lits in the group: In this group you have to gain 3 c	radita				
•	rses in the group: In this group you have to comple		202			
Credits in the grou						
Note on the group	•	dent iei může	e vvkona	at kdvkol	iv v průběł	nu studia.
	avšak v souladu s příslušnými ustanoveními					
Code of the groun	: 12B-KMENP TZI STR					
• •	p: 01 2012 souhrn skupin 12B*PiP-KMEN pro i od	1 do 6				
•	lits in the group: In this group you have to gain 156					
•	rses in the group: In this group you have to comple		rses			
Credits in the grou			1303			
Note on the group	•	akalářských	program	nů STR a	a TZSI	
	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
	Automatic Control					
2371047	Milan Hofreiter, R žena Petrová, Tomáš Vyhlídal, Jaromír Fišer Tomáš Vyhlídal Tomáš Vyhlídal (Gar.)	Z,ZK	5	3P+15C+08_	*	Р
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna , Jan Sko ilas Radek Šulc Radek Šulc (Gar.)	КZ	3	2P+1C	1	Р
2131512	Machine Elements and Mechanisms I. František Lopot	Z,ZK	6	3P+2C	*	Р
2131026	Machine Elements and Mechanisms II Eliška Cézová, Zden k ešpíro, Martin Dub, Jan Flek, Ji í Houkal, Jan Kanaval, František Lopot, Karel Petr František Lopot František Lopot (Gar.)	ZK	3	3P+0C	*	Р
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák Zuzana Sedlecká Jan Chyský (Gar.)	Z,ZK	4	2P+06C+14L	*	Ρ
2141505	Electrical machines and drives Jan Chyský, Jaroslav Novák, Lukáš Novák Jaroslav Novák Jaroslav Novák (Gar.)	Z,ZK	4	2P+06C+1.4L	*	Р
2021041	Physics I.	Z,ZK	7	4P+1L	*	Р
2021025	Physics II.	Z,ZK	4	1P+2L	3	Р
2133025	Design František Lopot František Lopot (Gar.)	Z	4	0P+4C	*	Р
2011021	Constructive Geometry Ivana Linkeová	Z,ZK	6	3P+2C	*	Р
L		I	I	I	ı İ	

2381054	Management and Economics of the Enterprise Theodor Beran, Št pánka Uli ná, Vladimír Brdek, Ladislav Vaniš, Petr Žemli ka Theodor Beran Theodor Beran (Gar.)	Z,ZK	4	2P+2C	*	Р
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
2011009	Mathematics III Radka Keslerová, Ji í Holman, Gejza Dohnal, Marta ertíková, Vladimír Hric, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Tomáš Neustupa, Stanislav Kra mar Stanislav Kra mar (Gar.)	Z,ZK	5	2P+2C	*	Р
2311101	Mechanics I. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Zbyn k Šika Zbyn k Šika (Gar.)	Z,ZK	4	2P+2C	*	Р
2311102	Mechanics II. Pavel Bastl, Václav Bauma, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Zbyn k Šika, Václav Bauma Václav Bauma (Gar.)	Z,ZK	4	2P+2C	*	Р
2322029	Materials Science I. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková Jana Sobotová Jana Sobotová (Gar.)	KZ	3	2P+1L	2	Р
2321039	Materials Science II. Jana Sobotová, Eliška Gal íková, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Lucie Pilsová, Ta ana Vacková, Jan Walter, Jana Sobotová Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2011049	Numerical Mathematics Radka Keslerová, Ji í Holman, Marta ertíková, Vladimír Hric, Petr Louda, Lukáš Hájek, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Petr Svá ek Petr Svá ek (Gar.)	Z,ZK	4	2P+2C	4	Р
2012037	Computer Graphics Marta Hlavová, Ji í Holman, Nikola Pajerová, Martin Hanek, Jan Karel, Ivana Linkeová, Jaroslav Cibulka Ivana Linkeová Ivana Linkeová (Gar.)	KZ	3	1P+1C	*	Р
2372041	Computer Support for Study Vladimír Hlavá	KZ	3	1P+1C	*	Р
2181026	Momentum, Mass and Heat Transfer Martin Dostál, Vojt ch B Iohlav, Stanislav Solna, Jan Sko ilas, Tomáš Jirout, Adam Krupica, Ji í Moravec Tomáš Jirout Tomáš Jirout (Gar.)	Z,ZK	5	3P+1C	*	Р
2131002	Engineering Design II Eliška Cézová, Martin Dub, Jan Flek, Jan Kanaval, František Lopot, Karel Petr, Martin Havlí ek, Jan Hoidekr, Roman Uhlí Karel Petr Karel Petr (Gar.)	Z,ZK	4	2P+3C	2	Р
2133013	Engineering Design III. Jan Kanaval, František Lopot, Jan Hoidekr, David Skalický, Roman Uhlí Jan Kanaval Jan Kanaval (Gar.)	Z	2	0P+2C	Z	Р
2133014	Engineering Design IV. František Lopot František Lopot (Gar.)	Z	2	0P+2C	L	Р
2372083	Measurement in Engineering Martin Novák, Vladimír Hlavá Martin Novák Martin Novák (Gar.)	KZ	3	1P+0C+2L	*	Р
2331068	Technology I.	Z,ZK	5	2P+2C	*	Р
2341014	Technology II.	Z,ZK	5	2P+0C+2L	*	Р
2012035	Algorithmization and Programming Fundamentals Ji í Holman, Marta ertíková, Vladimír Hric, Lukáš Hájek, Jan Halama, Vladimír Prokop, Martin Hanek, Jan Karel, Josef Musil, Petr Svá ek Petr Svá ek (Gar.)	ΚZ	4	1P+2C	*	Р
2153005	Fundamentals of Energy Conversions	Z	1	1P+1C	*	Р
2383001	Fundamentals of Law Václav Pilík Václav Pilík (Gar.)	Z	2	1P+1C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12B-KMENP TZI STR Name=01 2012 souhrn skupin 12B*PiP-KMEN pro i od 1 do 6

2371047	Automatic Control	Z.ZK	5
	e important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of autom	, ,	v and practice
	pen versus closed loop control, design of controllers and frequency based analysis of control systems. The course also conce		
via programmable logic	controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained	I. Students begin	to work with
MATLAB software as a	common platform of control engineers.		
2182019	Chemistry	KZ	3
General chemistry from	the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properti	es of matter, therr	nodynamics,
phase equilibrium, cher	nical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and bioch	emistry. Laborator	ry practice is
oriented upon the mate	rial properties measurement.		
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
Joints and joining eleme	nts (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters	s, keys). Mechanic	al transmissions
(belt, chain, friction, gea	ar drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloade	ed connecting bolt	s, clamped,
pressed, splined and ke	y joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple as	sembly units is als	so indispensable
seminar work.			

2131026	Machine Elements and Mechanisms II	ZK	3
Preliminary design, des	ign calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanis	m, pipelines and t	heir accessories
and fittings.			
2141504	Electric Circuits and Electronics	Z,ZK	4
-	of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of		
	prices. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilized	er, power control,	operational
	d digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprocessor.		
2141505	Electrical machines and drives	Z,ZK	4
	al power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Tra perating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed		
	hachines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque chara		-
Low-voltage distribution		Storiotio. Low Volte	inot amonto.
2021041	Physics I.	Z,ZK	7
	ics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic	1 · · ·	-
-	s. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co		
insulators. Magnetic fie	Id. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and inc	direct measureme	nts, regression,
measurements of 11 va	arious experiments related to the lectures.		
2021025	Physics II.	Z,ZK	4
Faraday's law of electro	magnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic w	aves. Interaction
of radiation with matter	Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a	nd periodic system	n of elements.
	Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e.	xperiments related	to the lectures.
2133025	Design	Z	4
Design, design calculat	tions and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft couplings and	clutches.	
2011021	Constructive Geometry	Z,ZK	6
The subject is focused	on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.		
2381054	Management and Economics of the Enterprise	Z,ZK	4
The subject is intended	to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonable and the students of the s	oning and to help t	hem understand
	between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audi		
-	anizations. every product or service is valued at a selling price and therefore it is necessary to understand the simple costing	-	-
	er reports and should understand the basic structure of financial statements. As a future manager, he will compile and approv		-
	vill learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project mar	nagement. For dec	cision-making
	n the applications of multi-criteria decision-making. The basics of marketing and strategic management will be introduced.		
2011056	Mathematics I	Z,ZK	8
	emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connect		
-	procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic area	is: eigennumbers a	and eigenvectors
	nomial, integral as a limit function, integration of some special functions.	7 71	
2011062	Matematika II.	Z,ZK	8
	boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differentiability is a second state of the second s	-	
. ,	tion given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ lindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr		
	a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a ve		
Gauss-Ostrogradskij th			sundee. The
2011009	Mathematics III	Z,ZK	5
	in ordinary differential equation and infinite series.	2,21	5
2311101	Mechanics I.	Z,ZK	4
	the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their		-
	ne methods of description of position and motion of particles and rigid bodies.		
2311102	Mechanics II.	Z,ZK	4
	of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motio		
	Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and		
	eory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechanisms.		
2322029	Materials Science I.	KZ	3
	te of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, def	1 1	-
fracture of materials, st	ructure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, ir	ron-carbon phase	diagram.
2321039	Materials Science II.	Z,ZK	4
	lurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal ar	1 ' 1	-
	lloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.		1 0,
2011049	Numerical Mathematics	Z,ZK	4
	/stems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Numer	1 1	
	pundary value problems. Numerical solution of basic linear partial differential equations by finite difference method.		
2012037	Computer Graphics	KZ	3
2372041	Computer Support for Study	KZ	3
	students into creating technical and professional documents on computers or Web and into realizing technical computations w	1 1	-
	creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical		
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	port phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanic	1 ' 1	-
	tinuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and		
	by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
2131002	Engineering Design II	Z,ZK	4
	(Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surfa		-
	rancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	-	
2133013	Engineering Design III.	Z	2
	it (draft drawing, detail drawing, assembly drawing, technical report)	· I	

2133014	Engineering Design IV.	Z	2
2372083	Measurement in Engineering	KZ	3
Overview of senso instruments.	or principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration an	d verification of me	easurement
2331068	Technology I.	Z,ZK	5
Foundry properties	s of metals. Treatment. Pouring. Casting solidification. Moulding and core making. Thermal treatment. Plastic deformation. Division of	forming processes	s. Semi-products
heating-up. Cutting	g. Cold and hot forming. Welds. Weldability. Weldment testing. Thermal cutting. Brazing. Surface treatments.		
2341014	Technology II.	Z,ZK	5
mechanics of chip	formation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining ec	onomics. Automati	on of processes
programming of m	anufacture. Engineering metrology. Assembly techniques. Introduction to process planing.		
programming or m			
2012035	Algorithmization and Programming Fundamentals	KZ	4
2012035	Algorithmization and Programming Fundamentals	1	-
2012035 Programming in M		atrices, vectors and	d operations.
2012035 Programming in M Writting M-script. I	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma	atrices, vectors an Systems of linear e	d operations. quations. Script
2012035 Programming in M Writting M-script. In and functions. Stru	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S	atrices, vectors an Systems of linear e Structures. Algorit	d operations. quations. Script hmization of
2012035 Programming in M Writting M-script. In and functions. Stru	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S ucture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers.	atrices, vectors an Systems of linear e Structures. Algorit	d operations. quations. Scripts hmization of
2012035 Programming in M Writting M-script. I and functions. Stru simple programs: r	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S Jcture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution o	atrices, vectors an Systems of linear e Structures. Algorit	d operations. quations. Script hmization of
2012035 Programming in M Writting M-script. I and functions. Stru simple programs: r 2153005 2383001	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S acture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution o Fundamentals of Energy Conversions	Atrices, vectors an Systems of linear e Structures. Algoriti f systems of linear Z Z	d operations. quations. Script hmization of equations. 1 2
2012035 Programming in M Writting M-script. I and functions. Stru simple programs: r 2153005 2383001 Basic orientation ir	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S jucture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution o Fundamentals of Energy Conversions Fundamentals of Law	Atrices, vectors an Systems of linear e Structures. Algoriti f systems of linear Z Z ovide a view into t	d operations. quations. Script hmization of equations. 1 2 he Czech Lega
2012035 Programming in M Writting M-script. I and functions. Stru simple programs: r 2153005 2383001 Basic orientation ir Order, particular so	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S jucture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution o Fundamentals of Energy Conversions Fundamentals of Law n legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to pr	Atrices, vectors and Systems of linear e Structures. Algoriti f systems of linear Z Z ovide a view into t is necessary for s	d operations. quations. Script hmization of equations. 1 2 he Czech Lega tudents to know
2012035 Programming in M Writting M-script. I and functions. Stru simple programs: r 2153005 2383001 Basic orientation in Order, particular so our legal institution	IATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Ma nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. S jucture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution o Fundamentals of Energy Conversions Fundamentals of Law n legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to pr ources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It	Atrices, vectors and Systems of linear e Structures. Algoriti f systems of linear Z Z ovide a view into t is necessary for s ws. At the same tim	d operations. quations. Script: hmization of equations. 1 2 he Czech Legal tudents to know ne the course

Code of the group: 12BT**P-ALFA Name of the group: 02 2012 ALFA povinné pro TZI Requirement credits in the group: In this group you have to gain 38 credits Requirement courses in the group: In this group you have to complete 14 courses Credits in the group: 38 Note on the group:

	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	*	Р
202A025	Physics II.A	ZK	2	0P+0C	*	Р
201A021	Constructive Geometry A Ivana Linkeová	ZK	3	0P+0C	*	Р
201A056	Mathematics I.A Radka Keslerová	ZK	4	0P+0C	*	Р
201A062	Mathematics II.A Radka Keslerová	ZK	4	0P+0C	*	Ρ
201A009	Mathematics III.A Stanislav Kra mar	ZK	2	0P+0C	*	Р
201A049	Numerical Mathematics A Lud k Beneš	ZK	2	0P+0C	*	Ρ

Characteristics of the courses of this group of Study Plan: Code=12BT**P-ALFA Name=02 2012 ALFA povinné pro TZI

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 fiel	d. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and inc	direct measureme	nts, regression,			
measurements of 11 va	rious experiments related to the lectures.					
202A025	Physics II.A	ZK	2			
Faraday's law of electror	nagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic w	aves. Interaction			
of radiation with matter.	Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom a	nd periodic syster	n of elements.			
Spectra, x-rays, ;laser. E	Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	xperiments related	d to the lectures.			
201A021	Constructive Geometry A	ZK	3			
The subject is focused of	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 alg	jebra, 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, be	oundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differe	ential operators div	v (divergence)			
and curl (rotation). Funct	ion given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ	ral, Fubini theoren	n. Transformation			
of integrals to polar, cyli	ndrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr	een'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 the	eorem.					
201A009	Mathematics III.A	ZK	2			
201A049	Numerical Mathematics A	ZK	2			

Code of the group: 12B*P*P-ZT12 Name of the group: 04 2012 prezen ní 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:

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

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

2333038 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.

3

Ζ

Code of the group: 12BT*5P-ME3 Name of the group: 09 2012 ME3 pro TZI Requirement credits in the group: In this group you have to gain 7 credits

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

Credits in the group: 7

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
2311107	Mechanics III. Tomáš Vampola	Z,ZK	7	2P+3C	5	Р

Characteristics of the courses of this group of Study Plan: Code=12BT*5P-ME3 Name=09 2012 ME3 pro TZI

2311107 Mechanics III.

Z,ZK 7 Mechanics III deals with the basic concepts of dynamics. Methods of solving the dynamics of mass particle and body motion and their systems are described. Methods for describing and solving vibrations of systems.

Name of the block: Compulsory elective courses Minimal number of credits of the block: 10

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 aroup: 2

Note on the group:

Ze skupiny humanitních předmětů nutno j e d e n absolvovat

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

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

2383009 Communication and Dealing with People Ζ Human communication represents an irreplaceable phenomenon in human activity, as it is present in practically all of his activities. The same applies (with specific modifications) to the activities of managers. So you can't not communicate - you can only communicate badly, well and excellently.

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

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

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 10) Requirement courses in the group: In this group you have to complete at least 1 course (at most 5)

Credits in the group: 2

Note on the group:

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

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

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

2041061	English-Bachelor Exam	Z,ZK	2			
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions						
to write a summary, a r	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041063	French - Bachelor Exam /FME	Z,ZK	2			
Mapped to the Commor	Buropean Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	iculties, to take pa	rt in discussions,			
to write a summary, a r	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041062	German - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Commor	. European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	iculties, to take pa	rt in discussions,			
to write a summary, a r	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041065	Russian - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Commor	\dot{h} European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diffi	iculties, to take pa	rt in discussions,			
to write a summary, a r	eport and an essay, to read technical texts, to master grammar at advanced level.					
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2			
Mapped to the Common European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficulties, to take part in discussions,						
to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.						

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

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

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

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

Credits in the group: 2

Note on the group:

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
2012091	Project Ji í Fürst	KZ	2	0P+2C	*	PV
2152091	Deparmental Project	KZ	2	0P+2C	*	PV
2182091	Project Tomáš Jirout	KZ	2	0P+2C	*	PV
2322091	Project Jana Sobotová, Ji í Cejp, Pavlína Hájková, Jan Kr il, Vladimír Mára, Ta ana Vacková, Jakub Horník, Ladislav Cvr ek, Elena ižmárová, Jana Sobotová Jana Sobotová (Gar.)	кz	2	0P+2C	*	PV
2332091	Project	KZ	2	0P+2C	*	PV
2342091	Project	KZ	2	0P+2C	*	PV
2352091	Specialization Project	KZ	2	0P+2C+0L	*	PV
2362091	Project	KZ	2	0P+2C	*	PV
2372091	Project	KZ	2	0P+2C	*	PV

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

2012091	Project	KZ	2
2152091	Deparmental Project	KZ	2
2182091	Project	KZ	2
Absolvent se sez	známí se základy oboru Procesní technika.		
2322091	Project	KZ	2
with particular em	nphasis on experimental technologies which can be applied in their bachelor theses. They can also mention a planned experime	nt or evaluate hither	to obtained
knowledge or res	sults.		
9	· · · · · · · · · · · · · · · · · · ·	K7	2
knowledge or res 2332091 2342091 Work on specializ	Project Project	KZ KZ	2
2332091 2342091	Project Project		2
2332091 2342091 Work on specializ	Project Project zed tasks.	KZ	2

An individual project from the branch of specialisation, which student will study on his/her magister level

Code of the group: 12BT*6Q-BP

Name of the group: 11 2012 BTZI 6. sem bakalá ské práce

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

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

Credits in the group: 4

Note on the group:

poznámka 12BT*6Q-BP 2012 BTZI 6. sem bakalářské práce

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
2213991	Bachelor Thesis	Z	4	0P+8C	*	PV
2373991	Bachelor Thesis	Z	4	0P+0C	*	PV
2363991	Bachelor Thesis	Z	4	0P+0C	*	PV
2153991	Bachelor Thesis	Z	4	0P+0C	*	PV
2323991	Bachelor thesis	Z	4	0P+6C	*	PV
2183991	Bachelor Thesis Tomáš Jirout	Z	4	0P+0C	*	PV
2333991	Bachelor Thesis	Z	4	0P+0C	*	PV
2013991	Bachelor Thesis	Z	4	0P+0C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12BT*6Q-BP Name=11 2012 BTZI 6. sem bakalá ské práce

	_				
Bachelor Thesis	Z	4			
Each student will solve his individual theme under guiding of his individual supervising department specialist. Result is his/her bachelor thesis.					
Bachelor Thesis	Z	4			
Bachelor Thesis	Z	4			
Bachelor thesis	Z	4			
elor thesis on an assignment under the supervision.					
Bachelor Thesis	Z	4			
Bachelor Thesis	Z	4			
Bachelor Thesis	Z	4			
	s individual theme under guiding of his individual supervising department specialist. Result is his/her bachelor thesis. Bachelor Thesis Bachelor Thesis elor thesis on an assignment under the supervision. Bachelor Thesis Bachelor Thesis Bachelor Thesis	is individual theme under guiding of his individual supervising department specialist. Result is his/her bachelor thesis. Bachelor Thesis Bachelor Thesis C C C C C C C C C C C C C C C C C C			

Name of the block: Elective courses Minimal number of credits of the block: 0 The role of the block: V

Code of the group: 12B**1V-DOP SEMI Name of the group: 05 2012 doporu ené seminá e Requirement credits in the group: Requirement courses in the group: Credits in the group: 0 Note on the group: Pokud si chce student své dosu atd.) doplnit, může si zapsat ně

Pokud si chce student své dosud získané znalosti (například z matematiky, fyziky, cizích jazyků atd.) doplnit, může si zapsat některý z volitelných předmětů, které příslušné ústavy pro 1. semestr (zimní) vypisují. Doporučujeme zejména předměty uvedené v této skupině

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2026016	Physics - Seminar	Z	2	0P+2C	1	V
2016007	Mathematics I Seminar Radka Keslerová, Hynek ezní ek, Olga Majlingová Radka Keslerová Gejza Dohnal (Gar.)	Z	2	0P+2C	1	V
Characteristics of	the courses of this group of Study Plan: Code=12B**1V-DOP SEM	/II Name=05 2	012 dop	oru ené	seminá e	
2026016	Physics - Seminar				Z	2
	eant for high-school students for repetition of high-school physics.				7	
2016007	Mathematics I Seminar				Z	2
Code of the gro	oup: 12B**1V-DOP ZJK					
•	roup: 06 2012 doporu ené základní jazykové kurzy a	prezentad	e			
•	redits in the group:					
•	courses in the group:					
Credits in the c	U					
Note on the gr						
Note on the gr	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their	Completion	Credits	Scope	Semester	Role
oouc	members)	Completion	orcans	ocope	Comester	Noic
2046155	Tutors, authors and guarantors (gar.) English Conversation	Z	2	0P+2C	*	V
2040155	Ilona Šimice, Michele Le Blanc Ilona Šimice Michele Le Blanc (Gar.)		2			V
2046156	English Conversation Ilona Šimice, Michele Le Blanc	Z	2	0P+2C	L	V
2046071	English - Lower Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	L	V
0040070	English - Lower Intermediate	7	_	0.0.00		
2046070	Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	Z	2	0P+2C	Z	V
2046074	English - Advanced Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová,	Z	2	0P+2C	z	V
	Michele Le Blanc Michaela Schusová Ilona Šimice (Gar.) English - Advanced					
2046075	Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová, Michele Le Blanc Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046072	English - Upper Intermediate Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Michaela Schusová Ilona Šimice (Gar.)	z	2	0P+2C	Z	V
	English - Upper Intermediate					
2046073	Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice Ilona Šimice (Gar.)	Z	2	0P+2C	L	V
2046068	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová	Z	2	0P+2C	z	V
2040000	Michaela Schusová Ilona Šimice (Gar.)			01 120	2	v
2046069	English - Beginners Ilona Šimice, Michaela Schusová, Hana Volejníková, Veronika Kratochvílová Ilona Šimice	z	2	0P+2C	L	V
2046126	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	L	V
2046125	Czech Lower Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046118	Czech - Advanced Jaroslava Kommová	Z	2	0P+2C	L	V
2046117	Czech - Advanced Jaroslava Kommová	Z	2	0P+2C	Z	V
2046127	Czech - Upper Intermediate Jaroslava Kommová	Z	2	0P+2C	Z	V
2046128	Czech - Upper Intermediate	Z	2	0P+2C	L	V
2046119	Jaroslava Kommová Czech Language for Beginners I.	Z	2	0P+2C	Z	v
2046120	Jaroslava Kommová Czech Language for Beginners II.	Z	2	0P+2C	L	V
	Jaroslava Kommová French - Lower Intermediate Course					
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 Dušana Jirovská (Gar.)	Z	2	0P+2C	L	v
2046090	French - Advanced Michaela Schusová, Dušana Jirovská, Eliška Vítková Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	v
2046089	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Dušana Jirovská Dušana Jirovská (Gar.)	Z	2	0P+2C	L	v
2046088	French - Upper Intermediate Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046084	French - Beginners Michaela Schusová, Dušana Jirovská Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046085	French - Beginners' Course Michaela Schusová, Dušana Jirovská Michaela Schusová Dušana Jirovská (Gar.)	Z	2	0P+2C	L	v
2146060	Indonesian Language Course for Exchange	Z	2	0P+2C	*	V
2146061	Technical Indonesian - Course I.	Z	2	0P+2C	Z	V
2144062	Technical Indonesian - Course II.	Z,ZK	3	1P+2C	L	v
2046078	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046079	German - Lower Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	v
2046083	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	V
2046082	German - Advanced Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046081	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	v
2046080	German - Upper Intermediate Course Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046076	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Michaela Schusová Petr Laurich (Gar.)	Z	2	0P+2C	z	v
2046077	German - Beginners Michaela Schusová, Jaroslava Kommová, Eliška Vítková, Petr Laurich Eliška Vítková Jaroslava Kommová (Gar.)	Z	2	0P+2C	L	v
2046161	Presentations in English Michaela Schusová	Z	2	0P+2C	*	v
2046166	Presentations in Czech Jaroslava Kommová	Z	2	0P+2C	*	V
2046162	Presentations in German Jaroslava Kommová, Eliška Vítková, Petr Laurich Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	*	v
2046164	Presentations in Russian Dušana Jirovská	Z	2	0P+2C	*	v
2046163	Presentations in French language	Z	2	0P+2C	*	v
2046165	Dušana Jirovská Dušana Jirovská Presentations in Spanish	Z	2	0P+2C	*	v
2046137	Eliška Vítková Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová, Michaela Schusová (Cor.)	Z	2	0P+2C	Z	v
2046138	Michaela Schusová Michaela Schusová (Gar.) Russian - Lower Intermediate Course Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	V
2046141	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046142	Russian - Advanced Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	v
2046140	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	v
2046139	Russian - Upper Intermediate Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v
2046136	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská Dušana Jirovská	Z	2	0P+2C	L	v
2046135	Russian - Beginners Michaela Schusová, Hana Volejníková, Dušana Jirovská, Eliška Vítková Michaela Schusová Michaela Schusová (Gar.)	Z	2	0P+2C	Z	v

2046099	Spanish - Lower Intermediate Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	v
2046098	Spanish - Lower Intermediate Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046096	Spanish - Beginners Michaela Schusová, Eliška Vítková, Jaime Andrés Villagómez Eliška Vítková Eliška Vítková (Gar.)	Z	2	0P+2C	Z	V
2046097	Spanish - Beginners Michaela Schusová, Jaime Andrés Villagómez Jaime Andrés Villagómez Jaime Andrés Villagómez (Gar.)	Z	2	0P+2C	L	V

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

2046155 English Conversation	Z	2
Improving communicative skills in speaking on general topics and general technical topics.		
2046156 English Conversation	Z	2
Improving communicative skills in speaking on general topics and general technical topics.		
2046071 English - Lower Intermediate	Z	2
Mapped to the Common European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which		
or at his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvem	ient of professiona	
2046070 English - Lower Intermediate	<u> </u>	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 familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	em. writing in a sir	nple way about
	Z	2
2046074 English - Advanced The aim: comprehension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writ	1	
level. Ability to write a summary, a report, an essay reading and comprehension of popular-scientific and scientific articles or texts from student's fie		
Grammar structures on advanced level. B1 - B2.		
2046075 English - Advanced	Z	2
Mapped to the Common European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in E		
and active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. reading and compre		
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046072 English - Upper Intermediate	Z	2
The aim is to extend language skills taking into consideration professional English and common professional terminology. Comprehension of standard	d English speech a	and conversation
about topics of everyday 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 Common European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional En	•	
terminology. Comprehension of standard English speech and conversation about topics of everyday life - at school, at work, during free time, on interm	nediate level. Broa	dening grammar
knowledge.		
2046068 English - Beginners	Z	2
Aim: Basic vocabulary 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 Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understan of general scientific terminology (professional language).	iding and use of b	asic expressions
2046126 Czech Lower Intermediate	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	1	
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	an. whiling in a si	liple way about
2046125 Czech Lower Intermediate	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	-	
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2046118 Czech -Advanced	Z	2
Mapped to the level of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in C	zech without grea	at difficulties and
active participation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehen		
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046117 Czech -Advanced	Z	2
Comprehension of spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in	discussions. Exp	essing opinions.
Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical a	rticles.	
2046127 Czech - Upper Intermediate	Z	2
	ty to describe exp	eriences and
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	, ,	
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate	Z	2
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional	Z Czech and comn	non professional
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter-	Z Czech and comn	non professional
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language.	Z Czech and comm mediate level. Bro	non professional adening the
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I.	Z Czech and comm mediate level. Bro	non professional
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I. Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profestion)	Z Czech and comm mediate level. Bro Z sional language)	non professional padening the 2
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I. Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profest 2046120) Czech Language for Beginners II.	Z Czech and comm mediate level. Bro Z sional language) Z	non professional adening the 2 2
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I. Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profest 2046120) Czech Language for Beginners II. Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form. Understanding and use of everyday life in a written and spoken form.	Z Czech and comm mediate level. Bro Z sional language) Z	non professional adening the 2 2
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I. Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess 2046120 Czech Language for Beginners II. Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding of general scientific terminology (professional language).	Z Czech and comm mediate level. Bro Z sional language) Z ding and use of b	non professional adening the 2 2 asic expressions
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I. Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess 2046120) Czech Language for Beginners II. Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (profess 2046120) Czech Language for Beginners II. Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understand of general scientific terminology (professional language). 2046086 French - Lower Intermediate Course	Z Czech and commediate level. Bro Z sional language) Z ding and use of b	non professional adening the 2 asic expressions 2
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts. 2046128 Czech - Upper Intermediate Mapped to the Common European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional terminology. Comprehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on inter knowledge technical language. 2046119 Czech Language for Beginners I. Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess 2046120 Czech Language for Beginners II. Mapped to the Common European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding of general scientific terminology (professional language).	Z Czech and commediate level. Bro Z sional language) Z ding and use of b	non professional adening the 2 asic expressions 2

0040007	French Lever Interne dista Course	7	
2046087	French - Lower Intermediate Course	Z	2
	Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which		
his/her free time and sp	peaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	of professional lar	nguage.
2046091	French - Advanced	Z	2
	Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	pics familiar to the	e student.
	ative speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading ar		
	ular scientific and technical articles.	ia understanding	texts concerning
2046090	French - Advanced	Z	2
Comprehension of spo	ken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participatio	n in discussions.	Expressing
opinions. Written skills.	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te	chnical articles.	
2046089	French - Upper Intermediate	7	2
		-	1
	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students co		
during free time, and ta	Iking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understa	inding general and	d technical texts.
2046088	French - Upper Intermediate	Z	2
	d speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Abili	tv to describe exc	1
-			
	one's opinions and plans. Reading and understanding general and technical texts.		
2046084	French - Beginners	Z	2
Understanding clearly	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	iting in a simple w	ay about familiar
topics. Reading and co	mprehension of simple texts. Improvement of professional language.		
2046085		Z	2
	French - Beginners' Course	_	1
Mapped to the level of	Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which	a student meets	at school or in
his/her free time and sp	beaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	of professional lar	nguage.
2146060	Indonesian Language Course for Exchange	Z	2
	nguage for Student Exchange Program to Indonesia	_	-
		_	
2146061	Technical Indonesian - Course I.	Z	2
Second part of Indones	sian Language for Student Exchange Program to Indonesia		
2144062	Technical Indonesian - Course II.	Z,ZK	3
		2,21	
	nguage for Student Exchange Program to Indonesia		
2046078	German - Lower Intermediate Course	Z	2
Aim: Understanding cle	arly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking about	, out them. Writing i	n a simple way
-	eading and comprehension of simple texts. Improvement of professional language.	Ŭ	. ,
-		7	0
2046079	German - Lower Intermediate Course	Z	2
Mapped to the level of	Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic	h a student meets	s either at school
or in his/her free time a	and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	nt of professional	language.
2046083	German - Advanced Course	7	2
		-	_
	Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in		-
	i in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and compre	ehension of popul	ar-scientific and
scientific articles or tex	ts from student's field of studies without difficulties. Grammar structures on advanced level.		
2046082	German - Advanced Course	Z	2
	ken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participati	n in discussions	
			. Expressing
	Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and te	chnical articles.	
2046081	German - Upper Intermediate Course	Z	2
Mapped to the level of	Common European Framework of Reference:A2 - B1 Understanding standard speech about familiar topics, that a students o	, omes across at w	ork, at school,
during free time, and ta	alking about these topics. Ability to describe experiences and events, explain one s opinions and plans. Reading and understa	nding general an	d technical texts.
-			
2046080	German - Upper Intermediate Course	Z	2
, v	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 o	one's opinions and plans. Reading and understanding general and technical texts.		
2046076	German - Beginners	Z	2
	eryday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess	_	1
		sional language)	
	n Framework of Reference for Languages A1.		
2046077	German - Beginners	Z	2
Mapped to the level Co	mmon European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding	and use of basic	expressions of
general scientific termi	nology (professional language).		
2046161	Presentations in English	Z	2
		<u>ک</u>	<u> </u>
Preparing students to p	resent in English on technical topics, with a possible co-operation with specialized departments.		
2046166	Presentations in Czech	Z	2
Preparing students to c	ive presentations in English on technical topics, with a possible co-operation with specialized departments.		1
2046162		Z	2
	Presentations in German		
	ing technical topics in German, possibly in cooperation with specialized departments.		
2046164	Presentations in Russian	Z	2
	ing technical topics in Russian, possibly in cooperation with specialized departments.	•	'
2046163		Z	2
	Presentations in French language	<u>ک</u>	<u>ک</u>
	ing technical topics in French, possibly in cooperation with specialized departments.		
2046165	Presentations in Spanish	Z	2
	ing technical topics in Spanish, possibly in cooperation with specialized departments.	•	'
2046137	Russian - Lower Intermediate Course	Z	2
	what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Wri	iting in a simple w	ay about familiar
topics. Reading and co	mprehension of simple texts. Improvement of professional language.		
2046138	Russian - Lower Intermediate Course	Z	2
	Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stu	_	
fron time and an adding	about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of profes		

2046141 Russian - Advanced	7	2					
Comprehension of spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participatio	- 1	_					
opinions. Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and technical articles.							
2046142 Russian - Advanced	7	2					
Apped to the level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to	⊢ ⊢ nics familiar to th	_					
Communication with native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and							
currant issues and popular scientific and technical articles.	, and of ortaining (ionic concorning					
2046140 Russian - Upper Intermediate	Z	2					
Mapped to the level of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student m	ہ – eets at work, at s	school, during					
free time, and talking about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understan							
2046139 Russian - Upper Intermediate	Z	2					
Understanding standard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	/ to describe exp	eriences and					
events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.							
2046136 Russian - Beginners	Z	2					
Mapped to the level of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understandin	g and use of bas	ic expressions					
of general scientific terminology (professional language)							
2046135 Russian - Beginners	Z	2					
Basic vocabulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profess	ional language)						
2046099 Spanish - Lower Intermediate	Z	2					
Mapped to the level of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a stud	ent meets at sch	ool 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 profes	sional language.						
2046098 Spanish - Lower Intermediate	Z	2					
Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writ	ing in a simple w	ay about familiar					
topics. Reading and comprehension of simple texts. Improvement of professional language.							
2046096 Spanish - Beginners	Z	2					
Aim:Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them	 Writing in a sim 	ple way about					
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.							
2046097 Spanish - Beginners	Z	2					
Mapped to the Common European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s							
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 lan	guage.					

List of courses of this pass:

Code	Name of the course	Completion	Credits
2011009	Mathematics III	Z,ZK	5
	An introductory course in ordinary differential equation and infinite series.		
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	ns.	•
2011049	Numerical Mathematics	Z,ZK	4
Numerical solution	of systems of linear equations, iterative methods. Numerical solution of nonlinear algebraic equations. Least squares method. Numerical	solution of ordinar	y differential
	equations, initial and boundary value problems. Numerical solution of basic linear partial differential equations by finite difference	nethod.	
2011056	Mathematics I	Z,ZK	8
In the course, grea	ter emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connection	s between concep	ts. Students
will also get to knov	v the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: e	gennumbers and e	eigenvectors
	of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.		
2011062	Matematika II.	Z,ZK	8
	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differentiability.		0,
,	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,		
	ar, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Greer		
field, independen	ce of a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vecto Gauss-Ostrogradskij theorem.	r field through a su	urface. The
2012035	Algorithmization and Programming Fundamentals	KZ	4
	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matri		-
	nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste		•
	tructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. St		
	s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of s	•	
2012037	Computer Graphics	KZ	3
2012091	Project	KZ	2
2013991	Bachelor Thesis	Z	4
2016007	Mathematics I Seminar	Z	2
201A009	Mathematics III.A	ZK	2
201A021	Constructive Geometry A	ZK	3
	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation	ns.	

201A056	Mathematics I.A Introduction to linear algebra, analytic geometry of straight lines and planes in E3, calculus of functions of one variable	ZK	4
0044000		71/	4
201A062	Mathematics II.A	ZK	4
	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different		e ,
and curl (rotation). F	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,	Fubini theorem. Tra	nsformation
of integrals to pola	r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Greer	n's theorem. A pote	ential vector
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	or field through a su	urface. The
	Gauss-Ostrogradskij theorem.		
2021025	Physics II.	Z,ZK	4
Faraday's law of ele	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic variables of electromagnetic variables of electromagnetic variables and the second variables of electromagnetic variables and the	tromagnetic waves	. Interaction
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	felements.
	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe		
2021041	Physics I.	Z,ZK	7
	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	· ·	-
	echanics of a particle motion. Finiciple of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, easile pro- echanics. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	•	
insulators. Magnet	c field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indire	ci measurements,	regression,
	measurements of 11 various experiments related to the lectures.	_	•
2026016	Physics - Seminar	Z	2
	The subject is mainly meant for high-school students for repetition of high-school physics.		
202A025	Physics II.A	ZK	2
Faraday's law of ele	ctromagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of electromagnetic variables and the second s	ctromagnetic waves	. Interaction
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.
Spectra, x-rays, ;la	ser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 expe	riments related to t	he lectures.
202A041	Physics I.	ZK	3
	namics of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro	1	-
	echanics. 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		
modiatoro. magnot	measurements of 11 various experiments related to the lectures.	or modouromonio,	rogrooolon,
0044004		7 71/	0
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	ties, to take part in	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	1	
2041062	German - Bachelor Exam / FME	Z,ZK	2
Mapped to the Corr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ties, 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 Corr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult	ties, to take part in	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	-	
2041064	Spanish - Bachelor Exam / FME	Z,ZK	2
	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficult		
mapped to the con	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
2044065		Z,ZK	2
2041065	Russian - Bachelor Exam / FME		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	ties, to take part in o	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	_	
2046068	English - Beginners	Z	2
Aim: Basic voc	abulary of everyday life in a written and spoken form. Understanding and use of basic expressions of general scientific terminology (r	professional langua	ige). A1
2046069	English - Beginners	Z	2
Mapped to the Con	mon European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understanding	, g and use of basic	expressions
	of general scientific terminology (professional language).		
2046070	English - Lower Intermediate	Z	2
	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	1	
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. A1 - A2.	5 1 1	.,
2046071		Z	2
	English - Lower Intermediate nmon European Framework of Reference Level A2 Aim: Understanding clearly spoken language about everyday situations which a s	1	2
	time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improveme		
2046072	English - Upper Intermediate	Z	2
The aim is to extend	d language skills taking into consideration professional English and common professional terminology. Comprehension of standard En		onversation
	about topics of everyday 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 Co	mmon European Framework of Reference Level B1. The aim is to extend language skills taking into consideration professional Engli	sh and common pi	ofessional
terminology. Compi	ehension 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
	ension of spoken English as well as lectures given in English without great difficulties and active participation in a discussion. Writter		
	te 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
	English - Auvanceu mmon European Framework of Reference Level B1 - B2. The aim: comprehension of spoken English as well as lectures given in En	-	
	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay reading and compreher		
and active particip	scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	ision of popular-SC	adminite di lu

2046076	German - Beginners	Z	2	
	f everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (profession the Common European Framework of Reference for Languages A1.	al language) It corr	responds to	
2046077 Mapped to the lev	German - Beginners el Common European Framework of Reference A1 Basic vocabulary of everyday life in a written and spoken form. Understanding an	Z d use of basic expr	2 ressions of	
	general scientific terminology (professional language).			
2046078 Aim: Understandin	German - Lower Intermediate Course Ig clearly what is spoken about everyday situations which a student meets in the company or in his/her free time and speaking about	Z them. Writing in a s	2 simple way	
	about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046079	German - Lower Intermediate Course	Z	2	
	I of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a			
	e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement	it of professional la		
2046080 Understanding st	German - Upper Intermediate Course andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	2 ences and	
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		-	
2046081	German - Upper Intermediate Course	Z	2	
	rel of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students com			
-	nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understanding			
2046082	German - Advanced Course		2	
-	of spoken language as well as lectures in German on topics familiar to the student. Communication with native speakers, participatio Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a			
2046083	German - Advanced Course el of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken German as well as lectures given in Ge	∠	2 t difficultion	
		-		
and active particip	ation in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehe scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.	naion or popular-so	aenuno anu	
2046084		7	2	
	French - Beginners arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	ı — ı		
Understanding clea	topics. Reading and comprehension of simple texts. Improvement of professional language.	, in a simple way as	Jour laminai	
2046085	French - Beginners' Course	7	2	
	rel of Common European Framework of Reference: A1 Aim: Understanding clearly what is spoken about everyday situations which a	student meets at s		
	he and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement			
2046086	French - Lower Intermediate Course	. 7	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	in a simple wav at		
- · · · · · · · · · · · · · · · · · · ·	topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046087	French - Lower Intermediate Course	7	2	
	rel of Common European Framework of Reference: A2 Aim: Understanding clearly what is spoken about everyday situations which a	student meets at s		
	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement			
2046088	French - Upper Intermediate	Z	2	
Understanding st	andard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe experie	ences and	
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.			
2046089	French - Upper Intermediate	Z	2	
Mapped to the lev	el of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar topics, that a students com	ies across at work,	at school,	
during free time, ar	nd talking about these topics. Ability to describe experiences and events, explain one's opinions and plans. Reading and understandi	ng general and tech	nnical texts.	
2046090	French - Advanced	Z	2	
Comprehension	of spoken language as well as lectures in French on topics familiar to the student. Communication with native speakers, participation	in discussions. Ex	pressing	
opinions.	Written skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific a	and technical article	es.	
2046091	French - Advanced	Z	2	
	level of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in French on to	•		
Communication wit	th native speakers, participation in discussions. Expressing opinions. Written skills. Ability to write an essay or a report. Reading and u	nderstanding texts	concerning	
	currant issues and popular scientific and technical articles.			
2046096	Spanish - Beginners	Z	2	
Aim:Understandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about	
0040007	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2046097	Spanish - Beginners	Z	2	
	ommon European Framework of Reference Level A1. Aim: Understanding clearly what is spoken about everyday situations which a s			
	he and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement			
2046098	Spanish - Lower Intermediate	<u> </u>	2	
Understanding clea	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing	, in a simple way at	out familiar	
2046000	topics. Reading and comprehension of simple texts. Improvement of professional language.	Z	2	
2046099 Mapped to the leve	Spanish - Lower Intermediate el of Common European Framework of Reference A2 Understanding clearly what is spoken about everyday situations which a studer	I – I		
	nd speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of p			
2046117	Czech -Advanced	Z	2	
	spoken language as well as lectures in Czech on topics familiar to the student. Communication with native speakers, participation in dis	I I		
	en skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific and to	-	J	
2046118	Czech -Advanced	Z	2	
	I of Common European Framework of Reference: B1- B2 The aim: comprehension of spoken Czech as well as lectures given in Czec	ı — ı		
	on in a discussion. Written and oral skills on advanced level. Ability to write a summary, a report, an essay. Reading and comprehens	-		
scientific articles or texts from student's field of studies without difficulties. Grammar structures on advanced level.				
2046119	Czech Language for Beginners I.	Z	2	
Basic voca	abulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	rofessional langua	ge)	

2046120	Czech Language for Beginners II. non European Framework of Reference Level A1 Aim: Basic vocabulary of everyday life in a written and spoken form. Understandin	Z	2
mapped to the Comm	of general scientific terminology (professional language).	-	expressions
2046125	Czech Lower Intermediate	Z	2
Aim: Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Writing in a simple	e way about
2046126	Czech Lower Intermediate	Z	2
Aim: Understanding	clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	Writing in a simple	e way about
2046127	Czech - Upper Intermediate	Z	2
1	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.	1	1
2046128	Czech - Upper Intermediate	Z	2
Mapped to the Comr	non European Framework of Reference Level A2-B1. The aim is to extend language skills taking into consideration professional Ca	zech and common	professiona
terminology. Comp	rehension of standard Czech speech and conversation about topics of everyday life - at school, at work, during free time, on intern	nediate level. Broa	dening the
	knowledge technical language.		
2046135	Russian - Beginners	Z	2
Basic vocab	ulary of everyday life in a spoken and written form. Understanding and use of basic expressions of general scientific terminology (p	professional langua	age)
2046136	Russian - Beginners	Z	2
Mapped to the level	of Common European Framework of Reference: A1 Basic vocabulary of everyday life in a spoken and written form. Understanding of general scientific terminology (professional language)	and use of basic	expressions
2046137	Russian - Lower Intermediate Course	Z	2
Understanding clearl	y 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.	g in a simple way a	bout familia
2046138	Russian - Lower Intermediate Course	Z	2
Mapped to the level	of Common European Framework of Reference: A2 Understanding clearly what is spoken about everyday situations which a stude	nt meets at school	or in his/he
free time and	speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of	professional langu	age.
2046139	Russian - Upper Intermediate	Z	2
Understanding star	ndard speech about familiar matters that a student meets at work, at school, during free time, and talking about these topics. Ability	to describe exper	iences and
	events, briefly explain one's opinions and plans. Reading and understanding general and technical texts.		
2046140	Russian - Upper Intermediate	Z	2
1	of Common European Framework of Reference: A2 - B1 Understanding standard speech about familiar matters that a student me	ets at work, at sch	nool, during
	about these topics. Ability to describe experiences and events, briefly explain one's opinions and plans. Reading and understandi		-
2046141	Russian - Advanced	7	2
	spoken language as well as lectures in Russian on topics familiar to the student. Communication with native speakers, participatic	n in discussions. E	
	ritten skills. Ability to write an essay or a report. Reading and understanding texts concerning currant issues and popular scientific		
2046142	Russian - Advanced	Z	2
	el of Common European Framework of reference: B1 - B2 Comprehension of spoken language as well as lectures in Russian on to		
	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.		
2046155	English Conversation	Z	2
	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	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
2040102	Preparation for presenting technical topics in German, possibly in cooperation with specialized departments.		-
2046163	Presentations in French language	Z	2
2040103	Preparation for presenting technical topics in French, possibly in cooperation with specialized departments.		2
2046164	Presentations in Russian	Z	2
2040104	Preparation for presenting technical topics in Russian, possibly in cooperation with specialized departments.		2
2046165		Z	2
2040105	Presentations in Spanish Preparation for presenting technical topics in Spanish, possibly in cooperation with specialized departments.	2	Z
2046466		7	2
2046166	Presentations in Czech	Z	2
0404000	Preparing students to give presentations in English on technical topics, with a possible co-operation with specialized departm		4
2131002	Engineering Design II	Z,ZK	4
	S (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface	-	
	s, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the	-	-
2131026 Preliminary design, d	Machine Elements and Mechanisms II lesign calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism,	CK ZK pipelines and their	accessories
0404545	and fittings.	: -: -: -: -: -: -: -: -: -: -: -: -:	-
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
, .	ments (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, k	• ·	
	n, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloade	-	-
pressed, splined and	key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple asser seminar work.	noly utilts is also if	uispensable
0100040	Seminar work.		
2133013			<u> </u>
	Engineering Design III.	Z	2
	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)		1 1
2133014		Z Z	2

Design, c	Design	Z	4
	lesign calculations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft coupli	-	1
2141504 Introduction into the	Electric Circuits and Electronics	Z,ZK energy. El. Power a	4 and Energy
	ectronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilizer	, power control, o	
0444505	amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microproc		
2141505	Electrical machines and drives	Z,ZK	4
	rical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transfo rr, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-		
	machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque characteri		-
	Low-voltage distribution system.		
2144062	Technical Indonesian - Course II.	Z,ZK	3
	Basic of Indonesian Language for Student Exchange Program to Indonesia		1
2146060	Indonesian Language Course for Exchange Basic of Indonesian Language for Student Exchange Program to Indonesia	Z	2
2146061	Technical Indonesian - Course I.	Z	2
	Second part of Indonesian Language for Student Exchange Program to Indonesia		I
2152091	Deparmental Project	KZ	2
2153005	Fundamentals of Energy Conversions	Z	1
2153991	Bachelor Thesis	Z	4
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	nsport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical		
me distributions in co	ontinuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and ther	mal radiation. Mul	ticompone
2182019	systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.	KZ	3
	Chemistry 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 biocher		
	oriented upon the material properties measurement.		
2182091	Project	KZ	2
	Absolvent se seznámí se základy oboru Procesní technika.		I
2183991	Bachelor Thesis	Z	4
2213991	Bachelor Thesis	Z	4
2311101	Mechanics I.	Z,ZK	4
	h the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their sys There are introduced the methods of description of position and motion of particles and rigid bodies.		hout frictio
2311102	Mechanics II.	Z,ZK	4
	Ind of rigid bodies. Transformation matrix. Kinematics of concurrent movements. Motion: translation, rotation, general planar motion, sp		
	n. Composition of mechanisms. Basic planar mechanisms. Analytical methods in kinematics of mechanisms - Trigonometric and vect		
-	in kinematics. Basic theory of gearing. Transmition mechanisms with geers. Strutting and seezing in mechanisms. Cable mechan	nisms.	
2311107	Mechanics III.	Z,ZK	7
Mechanics III deals v	ith the basic concepts of dynamics. Methods of solving the dynamics of mass particle and body motion and their systems are desc	cribed. Methods fo	, r describir
	and solving vibrations of systems.		a desembli
2321039	Matariala Sajanaa II		
	Materials Science II.	Z,ZK	4
undamentals of met	allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and th	ermo-mechanical	4
	allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and th technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materia	ermo-mechanical als.	4 processin
2322029	allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materia Materials Science I.	ermo-mechanical als. KZ	4 processin
2322029 History and present	allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materia Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defor	ermo-mechanical als. KZ mation, recrystalli	4 processin 3 zation and
2322029 History and present fracture of materia	allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of material Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, deformals, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, internal structure of metals, crystal lattices and their defects.	ermo-mechanical als. KZ mation, recrystalli on-carbon phase	4 processin 3 zation and diagram.
2322029 History and present fracture of materia 2322091	allurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of material Materials Science I. state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, deformals, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, irreproject	ermo-mechanical als. KZ mation, recrystalli on-carbon phase KZ	4 processin 3 zation and diagram. 2
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2362091	Project	KZ	2			
2363991	Bachelor Thesis	Z	4			
2371047	Automatic Control	Z,ZK	5			
Automatic controll	ers are important part of many industrial processes. The goal of this course is to introduce students into basic knowledge of automat	ic control theory ar	nd practice			
like transfer function	ns, open versus closed loop control, design of controllers and frequency based analysis of control systems. The course also concentra	tes on logic control	and control			
via programmabl	e logic controllers. Some seminaries are arranged in laboratories where practical skills and control engineering methods are trained.	Students begin to	work with			
	MATLAB software as a common platform of control engineers.					
2372041	Computer Support for Study	KZ	3			
The course introdu	es students into creating technical and professional documents on computers or Web and into realizing technical computations with t	he use of compute	rs. Students			
gain practica	al skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating techni	ical-based WWW p	oage.			
2372083	Measurement in Engineering	KZ	3			
Overview of sense	sor principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and	verification of mea	surement			
	instruments.					
2372091	Project	KZ	2			
	An individual project from the branch of specialisation, which student will study on his/her magister level					
2373991	Bachelor Thesis	Z	4			
	Each student will solve his individual theme under guiding of his individual supervising department specialist. Result is his/her bache	elor thesis.				
2381054	Management and Economics of the Enterprise	Z,ZK	4			
The subject is inten	ded to teach the students of the Faculty of Mechanical Engineering the basic economic starting points necessary for technical reasonin	g and to help them	understand			
the basic relationships between economic quantities costs - revenues, expenses - incomes and other basic economic terms. The goal is for the audience to be able to communicate						
with economists in organizations. every product or service is valued at a selling price and therefore it is necessary to understand the simple costing of products and services. Every						
technician will encounter reports and should understand the basic structure of financial statements. As a future manager, he will compile and approve the operating budget. In the field						
of management, they will learn basic managerial functions and their content. Furthermore, they will learn how to use network analysis in project management. For decision-making						
	purposes, they will learn the applications of multi-criteria decision-making. The basics of marketing and strategic management will be	introduced.				
2383001	Fundamentals of Law	Z	2			
Basic orientation in legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provide a view into the Czech Legal						
Order, particular sources of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is necessary for students to know						
our legal institutions, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws. At the same time the course						
leads students to know some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relationships and to make them ready						
	to prepare professional presentations and to understand basic structures between law and engineering	-	-			
2383009	Communication and Dealing with People	Z	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.						

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-07-17, time 02:55.