# Study plan

# Name of study plan: B TZSI 2021 - prezen ní

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Theoretical Fundamentals of Mechanical Engineering

Type of study: Bachelor full-time

Required credits: 156
Elective courses credits: 30
Sum of credits in the plan: 186

Note on the plan: odebrány p edm ty typu alfa, p vodní minimální po et kredit pro absolvování studijního

plánu byl 224

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 135

The role of the block: P

Code of the group: 01P1/B2342-B/FSI23P Name of the group: 1. B TZSI (s KVI a ZT1)

Requirement credits in the group: In this group you have to gain 29 credits

Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 29

Note on the group:

odebrány předměty alfa, původní skupina 01P1/B2342-B/FSI17P

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2021026	Physics I Jan Bartoní ek, Zuzana Budinská, Petr Duchá ek, Tomáš Horaž ovský, Dominik Chren, Zden k Kohout, Jan Koller, Ji í Kucha, Jan Novák, Daniel Tischler	Z,ZK	5	4P+1C+1L	L	Р
2313028	Career in Engineering Václav Bauma, Zbyn k Šika, Michael Valášek <b>Michael Valášek</b> Michael Valášek (Gar.)	Z	2	1P+1C	Z	Р
2011018	Constructive Geometry Jan Halama, Ivana Linkeová, Marta Hlavová, Martin Hanek, Milana Kittlerová, Nikola Pajerová, Vladimír Prokop, David Trdli ka, Jaroslav Cibulka Ivana Linkeová Ivana Linkeová (Gar.)	Z,ZK	5	3P+2C	1	Р
2011067	Mathematics I. Gejza Dohnal	Z,ZK	6	4P+4C	*	Р
2372041	Computer Support for Study Vladimír Hlavá	KZ	3	1P+1C	*	Р
2132031	Engineering Design I. František Lopot, Karel Petr, Marek Štádler, Roman Uhlí Karel Petr Karel Petr (Gar.)	KZ	3	1P+2C	1	Р
2132030	History of Technology Zden k ešpíro	KZ	3	1P+2C	Z	Р
2333008	Fundamental of Technology I.  Marie Kola íková	Z	2	1P+1C	1	Р

Characteristics of the courses of this group of Study Plan: Code=01P1/B2342-B/FSI23P Name=1. B TZSI (s KVI a ZT1)

Characteristics of the courses of this group of Study Plan: Code=01P1/B2342-B/F5123P Name=1. B 1251 (\$ KVI a 211)								
2021026	Physics I	Z,ZK	5					
Kinematics and dynami	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. Oscillation							
waves. Fluid mechanics	. Temperature and heat transfer. Kinetic theory of gases. Thermodynamics. Electric field, current, conductivity, resistance. Co	onductors, semico	nductors,					
insulators. Magnetic fiel	insulators. Magnetic field. Magnetic materials. Laboratories - accuracy of measurements, systematic and random errors, uncertainty of direct and indirect measurements, regression,							
measurement of experi	ments related to the lectures.							
2313028	Career in Engineering	Z	2					
The goal is to teach the principles of engineering, tits fundamental concepts, personal profile and career procedure in industrial enterprize.								
2011018	Constructive Geometry	Z,ZK	5					
The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relations.								

2011067	Mathematics I.	Z,ZK	6
In the course, greater	emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connec	tions between co	ncepts. Students
will also get to know the	e procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic area	s: eigennumbers	and eigenvectors
of a matrix, Taylor poly	nomial, integral as a limit function, integration of some special functions.		
2372041	Computer Support for Study	KZ	3
The course introduces	students into creating technical and professional documents on computers or Web and into realizing technical computations w	ith the use of com	puters. Students
gain practical skills by	creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical	-based WWW pag	ge.
2132031	Engineering Design I.	KZ	3
Basic of technical repr	esentation, dimensioning and tolerancing.	,	,
2132030	History of Technology	KZ	3
text	•	1	1
2333008	Fundamental of Technology I.	Z	2

Code of the group: 02P1/B2342--/FSI23P Name of the group: 2. B TZSI (s ZT2)

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

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 31 Note on the group:

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)  Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2021027	Physics II Petr VI ák	Z,ZK	4	2P+2L		Р
2381054	Management and Economics of the Enterprise Olga Heralová, Št pánka Uli ná, Vladimír Brdek, Petr Žemli ka Olga Heralová (Gar.)	Z,ZK	4	2P+2C	*	Р
2011068	Mathematics II.	Z,ZK	6	4P+4C		Р
2322029	Materials Science I. Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Lucie Pilsová, Jana Sobotová Jana Sobotová (Gar.)	KZ	3	2P+1L	2	Р
2131023	Engineering Design II.  Karel Petr	Z,ZK	5	2P+3C	2	Р
TV-2	Physical Education	Z	1		L	Р
TVK-L	Physical Education Course	Z	1	7dní	L	Р
2121046	Thermomechanics Tomáš Hyhlík, Pavel Šafa ík, Hana Schmirlerová, Michal Schmirler Tomáš Hyhlík Tomáš Hyhlík (Gar.)	Z,ZK	5	3P+14C+06L	-	Р
2343010	Fundamentals of Technology II.  Pavel Novák	Z	2	1P+0C+1L	. 2	Р

2021027	Physics II	Z,ZK	4
Faraday's law of elect	omagnetic induction. Maxwell's equations, electromagnetic waves. Light, wave optics, geometrical optics. Quantum properties of	electromagnetic w	aves. Interactio
of radiation with matte	er. 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, ;lase	. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 e	xperiments related	d to the lectures
2381054	Management and Economics of the Enterprise	Z,ZK	4
The course is design	ed to give students the understanding of economic principles. The economical part of the course is consisted from: explanation	of relationship be	tween costs an
revenues, expenses a	and income, concept of investment and calculations per product, presentation how to assemble a basic operating budget and e	xplanation of the l	oasic structure
of the financial staten	ents. The management introduces the basic managerial functions and their contents, the uses of network analysis in project m	nanagement, with	the application
of multi-criteria decisi	on, the basics of marketing and strategic management.		
2011068	Mathematics II.	Z,ZK	6
Open and closed set			
Open and closed set	boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differentiability.	ential operators div	/ (divergence)
•	boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Differenction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ	•	
and curl (rotation). Fu	·	ral, Fubini theoren	n. Transformatio
and curl (rotation). Fur of integrals to polar, o	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral	ral, Fubini theoren een's theorem. A	n. Transformatio potential vector
and curl (rotation). Fur of integrals to polar, of field, independence of	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ ylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr f a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a ve	ral, Fubini theoren een's theorem. A	n. Transformation potential vector
and curl (rotation). Fur of integrals to polar, c field, independence c Gauss-Ostrogradskij	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integ ylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr f a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a ve	ral, Fubini theoren een's theorem. A	n. Transformatio potential vector
and curl (rotation). Fur of integrals to polar, of field, independence of Gauss-Ostrogradskij 2322029	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr f a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector function.	ral, Fubini theoren reen's theorem. A ctor field through	n. Transformatio potential vector a surface. The
and curl (rotation). Fur of integrals to polar, of field, independence of Gauss-Ostrogradskij 2322029 History and present s	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral function and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Graline integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector end.  Materials Science I.	ral, Fubini theorem reen's theorem. A ctor field through  KZ ormation, recrysta	n. Transformatio potential vector a surface. The 3 allization and
and curl (rotation). Fur of integrals to polar, of field, independence of Gauss-Ostrogradskij 2322029 History and present stracture of materials,	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral function and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Graline integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vertheorem.  Materials Science I. tate of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, def	ral, Fubini theorem reen's theorem. A ctor field through  KZ ormation, recrysta	n. Transformatio potential vector a surface. The 3 allization and
and curl (rotation). Fur of integrals to polar, of field, independence of Gauss-Ostrogradskij 2322029 History and present st fracture of materials, 2131023	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral integral and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr f a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vector function. Flow of a vector function and a vector function and a vector function. Flow of a vector function and a vector function. Flow of a vector function and a vector function. Flow of a vector function and a vector function and a vector function. Flow of a vector function and a vector function and a vector function and a vector function. Flow of a vector function and a vector function and a vector function and Gr f a line integral of a scalar function and a vector function. Flow of a vector function and a vector function and Gr f a line integral of a scalar function and a vector function. Flow of a vector function and Gr f a line integral of a scalar function and a vector function. Flow of a vector function and Gr f a line integral of a scalar function and a vector function. Flow of a vector function and Gr f a line integral of a scalar function and a vector function. Flow of a line integral of a scalar function and Gr f a line integral of a scalar function and Gr f a line integral of a scalar function and Gr f a line integral of a scalar function and a vector function. Flow of a line integral of a scalar function and a vector function and Gr f a line integral of a scalar function and Gr f a line integral of a scalar function and Gr f a line integral of a scalar function and Gr f a line integral of a scalar function and a vector function and Gr f a line integral of a scalar function and a vector function and Gr f a line integral of a scalar function and a vector function and Gr f a line integral of a scalar function and a vector function and Gr f a line integral of a scalar function and a vector function and Gr f	ral, Fubini theorem reen's theorem. A ctor field through  KZ cormation, recrysta con-carbon phase  Z,ZK	n. Transformatio potential vector a surface. The  3 allization and diagram.
and curl (rotation). Further finds and curl (rotation). Further field, independence of Gauss-Ostrogradskij 2322029 History and present stracture of materials, 2131023 Principles of ISO GPS	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral integral and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr fa line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vectorem.  Materials Science I.  tate of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defeature and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in Engineering Design II.	KZ cormation, recrystation-carbon phase Z,ZK ace texture, geom	n. Transformatio potential vector a surface. The  3 allization and diagram. 5 etrical tolerance
and curl (rotation). Further of integrals to polar, of field, independence of Gauss-Ostrogradskij 2322029 History and present stracture of materials, 2131023 Principles of ISO GPS	nction given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral integral and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Gr f a line integral on the path. Simple smooth surface and surface integral of a scalar function and a vector function. Flow of a vectorem.  Materials Science I. tate of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defective and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in Engineering Design II.  6 (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface.	KZ cormation, recrystation-carbon phase Z,ZK ace texture, geom	n. Transformatio potential vector a surface. The  3 allization and diagram. 5 etrical tolerance

2121046 Thermomechanics

Basic laws of thermodynamics. State equation of ideal gas. Ideal and semi-ideal gases and their properties. Reversible and typical irreversible processes of ideal and semi-ideal gases. Mixtures of gases. Real gases and vapours, reversible and irreversible processes. Cycles of typical motors and machines. Moist air. Fundamentals of chemical thermodynamics. Thermodynamics of chemical reactions. Basic cases of heat transfer. Steady heat conduction. Heat convection. Similarity, a criterion equation. Heat transfer during phase changes. Thermal radiation. Combined cases of heat transfer. Heat exchangers.

2343010 Fundamentals of Technology II.

Introduction to machining. Principle of cutting process. Working parameters. Cutting tools - general characteristics, geometry, designation and symbols. The basic machining processes, their mechanics, equipment, conditions, material removal rate determination. The shapes produced, commercial tolerance and surface finish obtained. Laboratories

Code of the group: 03P1/B2342--/FSI23P

Name of the group: 3. B TZSI

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

Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 31

Note on the group:

odebrány předměty alfa, původní skupina 03P1/B2342--/FSI19P

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2182019	Chemistry Radek Šulc, Martin Dostál, Vojt ch B lohlav, Stanislav Solna, Jan Sko ilas Radek Šulc Radek Šulc (Gar.)	KZ	3	2P+1C	1	Р
2011009	Mathematics III Jan Halama, Milana Kittlerová, Vladimír Prokop, David Trdli ka, Marta ertíková, Jan Valášek, Hynek ezní ek, Lud k Beneš, Tomáš Bodnár, Stanislav Kra mar Stanislav Kra mar (Gar.)	Z,ZK	5	2P+2C	*	Р
2311101	Mechanics I. Václav Bauma, Zbyn k Šika, Michael Valášek, Pavel Bastl, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Michael Valášek Michael Valášek (Gar.)	Z,ZK	4	2P+2C	*	Р
2121502	Fluid Dynamics Tomáš Hyhlík, Pavel Šafa ík Tomáš Hyhlík Tomáš Hyhlík (Gar.)	Z,ZK	5	3P+2C	Z	Р
2321039	Materials Science II. Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Jan Walter, Pavlína Hájková, Stanislav Krum, Jan Kr il, Vladimír Mára, Stanislav Krum Jana Sobotová (Gar.)	Z,ZK	4	2P+2L	*	Р
2341014	Technology II. Pavel Novák	Z,ZK	5	2P+0C+2L	*	Р
TV-1	Physical Education	Z	1		Z	Р
2012035	Algorithmization and Programming Fundamentals Jan Halama, Martin Hanek, Vladimír Prokop, David Trdli ka, Marta ertíková, Olga Majlingová, Petr Svá ek, Vladimír Hric, Jan Karel, Petr Svá ek Petr Svá ek (Gar.)	KZ	4	1P+2C	*	Р

2182019	Chemistry	KZ	3
General chemistry	from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and	properties of matter, therm	odynamics,
ohase equilibrium,	chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) a	and biochemistry. Laboratory	practice is
oriented upon the r	naterial properties measurement.		
2011009	Mathematics III	Z,ZK	5
An introductory cou	rse in ordinary differential equation and infinite series.		
2311101	Mechanics I.	Z,ZK	4
Mechanics I deals v	with the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies	and their systems with and	without friction
here are introduce	d the methods of description of position and motion of particles and rigid bodies.		
2121502	Fluid Dynamics	Z,ZK	5
2321039	Materials Science II.	Z,ZK	4
undamentals of m	etallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and th	nermal and thermo-mechani	cal processin
echnical iron-carbo	n alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materials.		
2341014	Technology II.	Z,ZK	5
nechanics of chip f	prmation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, mach	nining economics. Automatio	n of processe
orogramming of ma	nufacture. Engineering metrology. Assembly techniques. Introduction to process planing.		
TV-1	Physical Education	Z	1
2012035	Algorithmization and Programming Fundamentals	KZ	4
orogramming in MA	TLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expres	ssion. Matrices, vectors and	operations.
Vritting M-script. In	put and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations are commanded in the command of th	ations. Systems of linear eq	uations. Scrip
and functions. Struc	ture of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. P	ointers, Structures, Algorith	mization of

Code of the group: 05P1/B2342--/FSI23P

Name of the group: 5. B TZSI

Requirement credits in the group: In this group you have to gain 26 credits

simple programs: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of systems of linear equations.

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

Credits in the group: 26

Note on the group:

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Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2131512	Machine Elements and Mechanisms I. František Lopot, Karel Petr, Marek Štádler, Eliška Cézová, Martin Dub, Martin Havlí ek, Jan Hoidekr, Jan Kanaval, Zden k ešpíro, František Lopot František Lopot (Gar.)	Z,ZK	6	3P+2C	*	Р
2141504	Electric Circuits and Electronics Stanislava Papežová, Jan Chyský, Jaroslav Novák, Lukáš Novák <b>Jaroslav</b> <b>Novák</b> Jan Chyský (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2311107	Mechanics III. Václav Bauma, Zbyn k Šika, Michael Valášek, Pavel Bastl, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Michael Valášek Michael Valášek (Gar.)	Z,ZK	7	2P+3C	5	Р
2111103	Strenght of Materials II  Ji í Šolc, Miroslav Španiel, Jan ezní ek, Karel Vítek, Tomáš Mareš, Karel  Doubrava, Dušan Gabriel, Ctirad Novotný, Zden k Padovec, Karel  Doubrava Miroslav Španiel (Gar.)	Z,ZK	5	3P+3C	Z	Р
2372083	Measurement in Engineering Martin Novák, Vladimír Hlavá Martin Novák Martin Novák (Gar.)	KZ	3	1P+0C+2L	*	Р
2153005	Fundamentals of Energy Conversions Ond ej Bartoš, Tomáš Dlouhý, Václav Dostál, Zden k Funda, Miroslav Gleitz, Jan Havlík, Št pán Hrouda, Jitka Jeníková, Guk Chol Jun, Jan Havlík	Z	1	1P+1C	*	Р

Characteristics	of the courses of this group of Study Plan: Code=05P1/B2342/FSI23P Name=5. B TZSI		
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
Joints and joining ele	ments (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotter	rs, keys). Mechanic	al transmissions
(belt, chain, friction,	gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloac	led connecting bolt	s, clamped,
pressed, splined and	key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple a	ssembly units is als	so indispensable
seminar work.			
2141504	Electric Circuits and Electronics	Z,ZK	4
Introduction into the	ory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators	of energy. El. Powe	er and Energy.
Introduction into elec	tronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabiliz	zer, power control,	operational
amplifier). Analogue	and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, microprocessor.		
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. Method	ls for describing
and solving vibration	s of systems.		
2111103	Strenght of Materials II	Z,ZK	5
This course is to pro	vide an advanced analysis of machine members. It also provides the prerequisite for other special courses concerning the thec	ory of elasticity and	plasticity.
2372083	Measurement in Engineering	KZ	3
Overview of sensor	principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration an	d verification of me	easurement
instruments.			
2153005	Fundamentals of Energy Conversions	Z	1

Code of the group: 06P1/B2342--/FSI21P

Name of the group: 6. B TZSI

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

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

Credits in the group: 18 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2131026	Machine Elements and Mechanisms II František Lopot, Karel Petr, Eliška Cézová, Martin Dub, Jan Flek, Jan Kanaval, Zden k ešpíro, Ji í Houkal František Lopot František Lopot (Gar.)	ZK	3	3P+0C	*	Р
2141505	Electrical machines and drives Michael Valášek, Jan Chyský, Jaroslav Novák, Lubomír Musálek <b>Jaroslav</b> <b>Novák</b> Jan Chyský (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2133025	Design František Lopot František Lopot (Gar.)	Z	4	0P+4C	*	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 <b>Tomáš Jirout</b> Tomáš Jirout (Gar.)	Z,ZK	5	3P+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=06P1/B2342--/FSI21P Name=6. B TZSI

2131026	Machine Elements and Mechanisms II	ZK	3
Preliminary design,	design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanis	sm, pipelines and t	heir accessories
and fittings.			
2141505	Electrical machines and drives	Z,ZK	4
AC el. curcuits. Elec	ctrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Tra	nsformer, principl	e, construction,
3-phase transforme	r, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, spee	d-torque characte	ristic, speed
control. Synchronol	is machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque chara	acteristic. Low-volt	age instruments
Low-voltage distrib	ıtion system.		
2133025	Design	Z	4
Design, design cald	ulations and their aplications in case of geared transmissions, axles and shafts, sliding and rolling bearings, shaft couplings and	clutches.	'
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
Fundamentals of tra	ansport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechani	cal energy equation	n. Residence
time distributions in	continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and	thermal radiation.	Multicomponent
systems. Mass tran	sfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.		
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 professional equipment of each expert with university degree.	ovide a view into t	he Czech Legal
Order, particular so	urces of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It	is necessary for s	tudents to know
our legal institutions	s, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of lav	vs. At the same tin	ne the course
leads students to ki	now some practical habits and processes while putting the law on, especially in domain of contracts and other important legal rela	ationships and to r	make them ready

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 19

The role of the block: PV

Code of the group: 03Q1/B2342--/FSI18P

Name of the group: 3. B TZSI

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 at least 1 course (at most 4)

Credits in the group: 2 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2023013	Practical Class in Physics I Zuzana Budinská, Petr Duchá ek, Tomáš Horaž ovský, Jan Koller <b>Zuzana</b> <b>Budinská</b>	Z	2	0P+2C		PV
2013044	Mathematics Repetitory Jan Halama, Milana Kittlerová, Ji í Holman Jan Halama (Gar.)	Z	2	0P+2C	*	PV
2133013	Engineering Design III. František Lopot, Roman Uhlí, Jan Hoidekr, Jan Kanaval, David Skalický <b>Jan</b> <b>Hoidekr</b> Jan Hoidekr (Gar.)	Z	2	0P+2C	Z	PV
2013066	Basics of Stochastics Gejza Dohnal Gejza Dohnal (Gar.)	Z	2	0P+2C	*	PV

2023013	Practical Class in Physics I	Z	2
The subject is inte	ded for students who need more detailed practising and improvement (including knowledge from former physics coursess, or higl	n-school knowledge	e) necessary fo
successful finishing	g Physics I course.The instructions are analogical to seminars with a short corresponding theoretical background. The link betwee	en physical concep	ts and method
of solution of typica	al problems is underlying.		
2013044	Mathematics Repetitory	Z	2
Lessons are intend	led for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to	theory and a variet	y of exercises
ranging sometimes	even from level of grammar school and aimed mainly to Mathematics I and III.		
2133013	Engineering Design III.	Z	2
Design of assembl	y unit (draft drawing, detail drawing, assembly drawing, technical report)		
2013066	Basics of Stochastics	Z	2
Students will learn	the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random	m variables, proba	bility models,
moultiveriete renden	n variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (freque	ncy analysis, parar	neter estimation
mullivariate randor			
	g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate th	e results of experir	nents, periorni
, hypothesis testing	g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate th on based on measurements, application of stochastic simulation methods, prediction of random processes and time series asses	•	

Code of the group: 04Q1/B2342--/FSI19P

Name of the group: 4. B TZSI

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 at least 1 course (at most 11)

Credits in the group: 2

## Note on the group:

2213014

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
2213014	Transportation and Aerospace Technology Gabriela Achtenová Petr Hatschbach (Gar.)	Z	2	0P+2C	L	PV
2323014	Materials of the 21st Century  Jan Kr il, Jakub Horváth, Ladislav Cvr ek, Hana Jelínek Šourková Jana  Sobotová Ladislav Cvr ek (Gar.)	Z	2	0P+2C		PV
2383020	Modern Management of Businesses and Projects Miroslav Žilka, Pavel Scholz Miroslav Žilka Miroslav Žilka (Gar.)	Z	2	0P+2C		PV
2333040	Perspective Production in Engineering Pavel Rohan, Antonín K íž Pavel Rohan Pavel Rohan (Gar.)	Z	2	0P+2C	4	PV
2183014	Progressive Processes of Energy Utilization Jan Sko ilas, Michal Kolovratník, Tomáš Jirout, Vladimír Zmrhal, Pavlína Zimmermannová, Lukáš Krátký Tomáš Jirout Tomáš Jirout (Gar.)	Z	2	0P+2C	*	PV
2353041	Practical introduction to production machines Petr Vavruška Petr Vavruška (Gar.)	Z	2	0P+2C+0L	-	PV
2023012	Practical Class in Physics II Zuzana Budinská, Petr Duchá ek, Tomáš Horaž ovský, Jan Koller <b>Zuzana</b> <b>Budinská</b> Tomáš Horaž ovský (Gar.)	Z	2	0P+2C		PV
2343040	Manufactory	Z	2	0P+2C		PV
2133014	Engineering Design IV. František Lopot František Lopot (Gar.)	Z	2	0P+2C	L	PV
2313040	Introduction into applied mechanics and mechatronics Václav Bauma, Zbyn k Šika, Michael Valášek, Vladimír Prokop, Tomáš Hyhlík, Petr Beneš, Ivo Bukovský, Jan Pelikán, Jan Zav el, Michael Valášek Michael Valášek (Gar.)	Z	2	0P+2C	*	PV
2373040	Robot Control Introduction Jakub Jura Pavel Trnka (Gar.)	Z	2	0P+0C+2L	*	PV

### Characteristics of the courses of this group of Study Plan: Code=04Q1/B2342--/FSI19P Name=4. B TZSI

of advanced materials, prediction and own evaluation of their properties. In addition, development trends for individual types of materials are discussed

Design and testing of gr	ound transportation vehicles, control systems, aircraft structures and propulsions. Selected topics of transportation and aero	space technology	are presented			
in seminars and by means of laboratory exercises. Information about possibility of master study and project work at CTU, trainee and internship in reputable firms, both in transportation						
and aerospace technological	ogy.					
2323014	Materials of the 21st Century	Z	2			
The subject is focused of	on characterization of structural and functional materials, which are currently used in technical practice. Attention is paid to technical	chnological metho	ds of production			

Ζ

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2383020 Modern Management of Businesses and Projects

Transportation and Aerospace Technology

The main objective of the course is to introduce students to modern trends and approaches that have emerged in corporate governance in recent years and will shape the future. The course introduces the main technical and technological trends that will significantly transform the industry, its economic, environmental benefits and risks in the near future. The second main topic represent information systems for management and planning of business processes and for support of managerial decision-making. Furthermore, the course deals with the issue of modern approaches and tools for production management and ends with issues of current trends in project management. The focus of the course is not to provide students with a detailed explanation, but to provide a general view of current trends and approaches in key areas of corporate governance. The required depth of individual areas is further developed within individual courses in the Master's degree program.

### 2333040 Perspective Production in Engineering

The subject focuses on the teaching of advanced engineering technology, modern trends in production management, development of new advanced materials, testing of materials, energy production and presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional videos, and tours to the high-tech material-working.

### 2183014 Progressive Processes of Energy Utilization

The scope of this subject is to introduce the fields of study in bachelor study programs "Engineering" and "Theoretical Fundamentals in Mechanical Engineering". Student gets knowledge of fundamentals in Environmental, Power and Process Engineering. In the field of Environmental Engineering, fundamentals of heating, ventilation, cooling, alternative sources of energy, separators and protection against dust and noise are presented. As for Power Engineering, heat and electricity production from fossil and renewable sources is presented, needs and applications of these energy forms in the industrial and private sectors are discussed. In the field of Process Engineering, technologies, machines and equipment in food, consumer and chemical industries, pharmacy, biotechnologies and waste treatment technologies are presented. Based on this information, student gets finally more detailed information during the processing of a brief seminar paper on selected topic, in which she/he is interested in.

## 2353041 Practical introduction to production machines

The course offers a practical introduction to production machines including modern CNC technologies and the basics of design considerations of components produced on CNC machines. Students will acquire the necessary knowledge of the production cycle of basic types of production machines as well as CNC machining centres, including the design brief, technologies and production procedures used and determination of technological conditions. Students will also familiarize themselves with machine operation, possibilities of machine and tool adjustment, production proper, testing procedures and product measurement. Basic statistical and operational diagnostic methods of measurement will also be demonstrated (measurements of accuracy, force, noise, vibration, temperature etc.)

## 2023012 Practical Class in Physics II

The subject is inteded for students who need more detailed practising and improvement (including knowledge from former physics coursess, or high-school knowledge) necessary for successful finishing Physics II course. The instructions are analogical to seminars with a short corresponding theoretical background. The link between physical concepts and methods of solution of typical problems is underlying.

- 1 -	2343040	Manufactory	Z	2	

The course presents three basic competencies profiling the institute - machining, technological design, metrology and quality management systems. The course is realized in the form of seminars, laboratory exercises and excursions to industrial partners. In this way, students will get acquainted with the activities of the machining group in the areas of CNC machine programming, complex CAD / CAM systems, machining tools, conventional but also unconventional machining methods and additive technologies. In the field of technological design, students will be introduced to the principles and methodology for designing production processes and systems using modern methods of production preparation (Lean Production, Just In Time, Make or Buy) and advanced software for production preparation and planning. In the field of technological design with the issue of designing production processes and complex production systems. Within metrology and quality management systems, students will then be introduced to modern product quality control technologies in the field of coordinate measurement? dimensional and geometric tolerances, surface texture. In the form of professional excursions to industrial companies, students are demonstrated the practical role of the above competencies in the product life cycle? marketing, construction, technical preparation of production, engineering production and quality control. The course will be scheduled in 4-hour blocks, once every 14 days due to higher efficiency of teaching within individual teaching blocks and excursions.

2133014	Engineering Design IV.	Z	2
2313040	Introduction into applied mechanics and mechatronics	Z	2
2373040	Robot Control Introduction	Z	2

The class introduces basic concepts and principles of robotics. Students will use construction kit for design, assemble and programme the robot. This subject is recommended for students of the second year of the bachelor study. There is no prerequisite for this subject.

Code of the group: 05Q1/B2342--/FSI20P

Name of the group: 5. B TZSI - Oborový p edm t I.

Requirement credits in the group: In this group you have to gain at least 3 credits (at most 5)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 18)

Credits in the group: 3

Note on the g			1			
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
2371110	Industrial Automation Lubomír Musálek, Šárka N mcová, Jakub Jura, Pavel Trnka, Jan Hošek, Matouš Cejnek <b>Pavel Trnka</b> Pavel Trnka (Gar.)	Z,ZK	4	2P+2C+0L	-	PV
2241068	Biomechanics for Bachelors Matej Daniel, Lukáš Horný <b>Matej Daniel</b> Matej Daniel (Gar.)	Z,ZK	3	2P+2C		PV
2211130	Transport Engineering Josef Kolá Josef Kolá Josef Kolá (Gar.)	Z,ZK	4	2P+2C+0L	*	PV
2121047	Hydro a Thermodynamics Michal Schmirler Tomáš Hyhlík Tomáš Hyhlík (Gar.)	Z,ZK	4	2P+2C		PV
2221221	Aeronautics and Astronautics Svatomír Slavík, Jan Klesa, Jaroslav Kousal, Tomáš enský	Z,ZK	4	2P+2C+0L	_	PV
2011715	Mathematical Modeling in Technical Applications Jan Halama, Ivana Linkeová, Martin Hanek, Vladimír Prokop, David Trdli ka, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Ji í Fürst,	Z,ZK	3	2P+2C	*	PV
2381006	Methods and Tools for Managerial Decisionmaking  Jan Lhota Miroslav Žilka Jan Lhota (Gar.)	Z,ZK	3	2P+2C		PV
2151705	Renewables energy sources Jan Havlík, Jakub Krempaský, Jan Hrdli ka, Lukáš Pila <b>Jakub Krempaský</b>	Z,ZK	4	2P+2C		PV
2181125	Process equipment and production lines Radek Šulc, Lukáš Krátký Lukáš Krátký Lukáš Krátký (Gar.)	Z,ZK	3	2P+2C		PV
2341001	Metrology Libor Beránek, Petr Mikeš Pavel Novák	Z,ZK	5	2P+0C+2L	*	PV
2321500	<b>Technical Materials I</b> Zden k Tolde, Jakub Horník, Jana Sobotová, Elena ižmárová, Stanislav Krum, Vladimír Mára, Jakub Horváth, Hana Jelínek Šourková <b>Stanislav Krum</b> Stanislav Krum (Gar.)	Z,ZK	4	2P+2C+0L	-	PV
2161022	Environmental Engineering Ji í Bašta Ji í Bašta Ji í Bašta (Gar.)	Z,ZK	4	2P+2C+0L	. 5	PV
2331075	Design Consideration Aleš Herman, Bohumír Bedná , Pavel Novák, František Tatí ek Bohumír Bedná Bohumír Bedná (Gar.)	Z,ZK	4	2P+2C+0L	-	PV
2131060	Transport Technology František Lopot, Roman Uhlí, Jan Hoidekr, Zden k ešpíro František Lopot František Lopot (Gar.)	Z,ZK	4	2P+2C+0L	. Z	PV
2021014	Physics - Selected Topics Zuzana Budinská, Zden k Tolde, Petr VI ák Zuzana Budinská (Gar.)	Z,ZK	3	2P+2C		PV
2311083	Selected Topics of Mechanics and Mechatronics Václav Bauma, Zbyn k Šika, Michael Valášek, Pavel Steinbauer Michael Valášek Michael Valášek (Gar.)	Z,ZK	4	2P+2C+0L	-	PV
2111505	Selected Items of Strenght of Materials  Miroslav Španiel, Jan ezní ek, Karel Vítek, Tomáš Mareš, Zden k Padovec, Ji í Kuželka, Martin Nesládek, Michal Bartošák, Milan Dvo ák, Michal Bartošák Miroslav Španiel (Gar.)	Z,ZK	3	2P+2C		PV
2351094	Production Technology  Jan Smolik, Vladimír Andrlík, Tomáš Krannich Tomáš Krannich Vladimír  Andrlík (Gar.)	Z,ZK	4	2P+2C+0L	-	PV

Characteristics of the courses of this group of Study Plan: Code=05Q1/B2342--/FSI20P Name=5. B TZSI - Oborový p edm t l.

2371110	Industrial Automation	Z,ZK	4
	Industrial Automation ents will learn the basic principles of automated systems used in current industrial practice, especially focused on the use of ac	1 ' 1	=
	ative. Specifically, these are PLCs and PLC networks, Distributed Control Systems (DCS) and Distributed Artificial Intelligence (D	•	•
•	olled drives, Industrial sensors, Micro machining, Methods of system integration and MES systems, Human Machine Interface	* *	
	lata Collection), Databases and cyber security, Data analysis, Machine vision (including optical processing and image preprocess	, ,	•
2241068	Biomechanics for Bachelors	Z,ZK	3
2211130	Transport Engineering	Z,ZK	4
	ort systems - characteristics, distribution and application vehicles. Characteristics of transport routes and dimensions of vehicles		-
-	eristics of the vehicles. Analysis of the driving cycle. Internal combustion engines - classification, characteristics, characteristic		-
	ism. The function of basic structural units and groups of vehicles.		
2121047	Hydro a Thermodynamics	Z,ZK	4
2221221	Aeronautics and Astronautics	Z,ZK	4
	ded as an introductory course in the field of aircraft technology for bachelor students. The course serves as a theoretical support		•
	t technology aimed at aircraft structures, engines and space. The first block is focused on obtaining an overview of aircraft stru		
	oduction technologies and aircraft systems. The second block introduces the basics of aerodynamics. The follow-up enginer se	· · · · · · · · · · · · · · · · · · ·	-
· · · · · · · · · · · · · · · · · · ·	bulsion units. The space section presents input information inthe field of space technology.		
2011715	Mathematical Modeling in Technical Applications	Z,ZK	3
	ematic models for basic engineering problems. Basic principles of solution by means of mathematical modeling, numerical ma		_
	oduce finite difference, finite volume and finite element methods including different topology of domain discretization (meshes).		-
	gineering problems of continuum mechanics.		
2381006	Methods and Tools for Managerial Decisionmaking	Z,ZK	3
	ed to project management approach. During the course are solved cases that respond to practical situations. The cases are st	1 '	_
	actions among costs, capacity of resources and the price. And also on the calculation typical kinds of variations and their expla		
appropriate manage	erial decision. The students are concerning on the right way of operational budget creation and assessment. The link on the inter-	ernal company acco	unting is shov
and explain. The co	mputerized models are used by explanation.		
2151705	Renewables energy sources	Z,ZK	4
The course deals w	ith overview of the currently used renewable energy sources. In a wider context, it concerns with their domestic as well as work	d-wide potential, pos	sibilities of the
utilization and possi	ble impacts on the environment. The course discusses in deeper details some of them, especially are emphasized the source	having the highest p	otential in the
Czech Republic – tł	iis is mostly hydropower, wind energy, solar energy and energy from biomass. Other renewable energy sources are to a smalle	er extent discussed a	ه مالمسم
geothermal energy,	tidal energy, etc.		is well, e.g.
2181125			is well, e.g.
2341001	Process equipment and production lines	Z,ZK	3
Metrology, intergration	Process equipment and production lines  Metrology	Z,ZK Z,ZK	
		Z,ZK	3 5
in 1, 2, end 3 coord	Metrology	Z,ZK d secondary standart	3 5 s. Measureme
	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structures are consistent of the control	Z,ZK d secondary standart	3 5 s. Measureme
Measurement autor	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structures are consistent of the control	Z,ZK d secondary standart	3 5 s. Measureme
Measurement autor 2321500	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface strunatisation.	Z,ZK d secondary standart ucture - roughness, v	3 5 s. Measureme vawiness.
Measurement autor 2321500 2161022	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface strunatisation.  Technical Materials I	Z,ZK d secondary standart ucture - roughness, v	3 5 s. Measureme vawiness.
Measurement autor 2321500 2161022 Application of a the	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface strunatisation.  Technical Materials I  Environmental Engineering ory in environmental engineering	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK	3 5 s. Measureme vawiness.
Measurement autor 2321500 2161022 Application of a the 2331075	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface strunatisation.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK	3 5 s. Measureme vawiness.
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface strunatisation.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK g and assembly techr	3 5 s. Measureme vawiness.
Measurement autor 2321500 2161022 Application of a ther 2331075 Relations between the basis for choosing relations	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structural station.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK  Z,ZK  g and assembly technology.	3 5 s. Measureme vawiness.  4 4 4 nologies. The
Measurement autor 2321500 2161022 Application of a the 2331075 Relations between basis for choosing r 2131060	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structural station.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC technology  Transport Technology	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK  Z,ZK  g and assembly techrology. Z,ZK	3 5 s. Measureme vawiness.  4 4 nologies. The
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between basis for choosing r 2131060 2021014	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structural station.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC technology  Physics - Selected Topics	Z,ZK d secondary standart ucture - roughness, v  Z,ZK  Z,ZK  Z,ZK  g and assembly technology.  Z,ZK  Z,ZK	3 5 s. Measureme vawiness.  4 4 4 nologies. The
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between basis for choosing r 2131060 2021014 The subject gives st	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structure is sufficient to the control of	Z,ZK d secondary standart ucture - roughness, v  Z,ZK Z,ZK Z,ZK g and assembly technology. Z,ZK Z,ZK and assembly technology.	3 5 s. Measureme vawiness.  4 4 nologies. The 4 3 cal application
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between obasis for choosing r 2131060 2021014 The subject gives so	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structure activation.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno  Transport Technology  Physics - Selected Topics  udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phene electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge	Z,ZK d secondary standart ucture - roughness, v  Z,ZK Z,ZK Z,ZK g and assembly technology. Z,ZK Z,ZK and assembly technology. Z,ZK and assembly technology.	3 5 s. Measureme vawiness.  4 4 4 nologies. The 4 3 cal applications, liquids and
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between basis for choosing r 2131060 2021014 The subject gives so (for example lasers, they will be acquain	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structural station.    Technical Materials	Z,ZK d secondary standart ucture - roughness, v  Z,ZK Z,ZK Z,ZK g and assembly technology. Z,ZK Z,ZK and assembly technology. Z,ZK and assembly technology.	3 5 s. Measureme vawiness.  4 4 4 nologies. The 4 3 cal applications, liquids and
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between basis for choosing r 2131060 2021014 The subject gives st (for example lasers, they will be acquain in Mechanical Engir	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structionatisation.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno  Transport Technology  Physics - Selected Topics udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phene electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge ted with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a fut teering.	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK g and assembly technology. Z,ZK Z,ZK and assembly technology.	3 5 s. Measureme vawiness.  4 4 4 nologies. The 4 3 cal applications, liquids and pplied science
Measurement autor 2321500 2161022 Application of a thee 2331075 Relations between basis for choosing r 2131060 2021014 The subject gives st (for example lasers, they will be acquain in Mechanical Engir 2311083	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structions are instituted in the properties of matter).  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining material and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno  Transport Technology  Physics - Selected Topics udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phen electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge and with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a fut seering.  Selected Topics of Mechanics and Mechatronics	Z,ZK d secondary standart ucture - roughness, v  Z,ZK Z,ZK Z,ZK  g and assembly technology. Z,ZK  Z,ZK  and assembly technology. Z,ZK	3 5 s. Measureme vawiness.  4 4 4 nologies. The 4 3 cal applications, liquids and pplied science
Measurement autor 2321500 2161022 Application of a ther 2331075 Relations between the basis for choosing in 2131060 2021014 The subject gives st (for example lasers, they will be acquain in Mechanical Engir 2311083 2111505	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structural structure.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining material and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno  Transport Technology  Physics - Selected Topics  udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phene electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge and with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a fut letering.  Selected Topics of Mechanics and Mechatronics  Selected Items of Strenght of Materials	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK g and assembly technology. Z,ZK z,ZK z,ZK z,ZK z,ZK z,ZK z,ZK z,ZK	3 5 s. Measureme vawiness.  4 4 nologies. The 4 3 cal applications, liquids and pplied science 4 3
Measurement autor 2321500 2161022 Application of a there 2331075 Relations between a basis for choosing re 2131060 2021014 The subject gives st (for example lasers, they will be acquain in Mechanical Engir 2311083 2111505 2351094	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface struction.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno  Transport Technology  Physics - Selected Topics udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phene electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge end with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a fundamental physics of their properties. The subject professionally profile students for a physical topics in a fundamental physics.  Selected Topics of Mechanics and Mechatronics  Selected Items of Strenght of Materials  Production Technology	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK g and assembly technology. Z,ZK z,ZK z,ZK z,ZK z,ZK z,ZK z,ZK z,ZK	3 5 s. Measureme vawiness.  4 4 4 nologies. The 4 3 cal applications, liquids and pplied science 4 3 4
Measurement autor 2321500 2161022 Application of a their 2331075 Relations between in basis for choosing in 2131060 2021014 The subject gives st (for example lasers, they will be acquain in Mechanical Engir 2311083 2111505 2351094 Manufacturing mack	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structions are inatisation.  Technical Materials I Environmental Engineering Organ in environmental engineering Design Consideration Construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining material and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno Transport Technology Physics - Selected Topics udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phene electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge ed with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a fut learning.  Selected Topics of Mechanics and Mechatronics Selected Items of Strenght of Materials Production Technology nines and equipment contains three basic parts. These are forming machines, machine tools and industrial robots and manipulations.	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK J and assembly technology. Z,ZK J and assembly technologies in solid state physic ture study program A Z,ZK Z,ZK Z,ZK Z,ZK Z,ZK Z,ZK Z,ZK Lators. Characteristic	3 5 s. Measurement vawiness.  4 4 4 nologies. The 4 3 cal applications, liquids and pplied science 4 3 4 s of machine
Measurement autor 2321500 2161022 Application of a their 2331075 Relations between in basis for choosing in 2131060 2021014 The subject gives st (for example lasers, they will be acquain in Mechanical Engir 2311083 2111505 2351094 Manufacturing machand equipment for in	Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and nates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface struction.  Technical Materials I  Environmental Engineering ory in environmental engineering  Design Consideration construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining naterial and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CNC techno  Transport Technology  Physics - Selected Topics udents a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phene electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge end with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a fundamental physics of their properties. The subject professionally profile students for a physical topics in a fundamental physics.  Selected Topics of Mechanics and Mechatronics  Selected Items of Strenght of Materials  Production Technology	Z,ZK d secondary standart ucture - roughness, v Z,ZK Z,ZK Z,ZK J and assembly technology. Z,ZK Domena in technologi e in solid state physic ture study program A Z,ZK Z,ZK Z,ZK LZ,ZK Z,ZK Z,ZK LZ,ZK Z,ZK	3 5 s. Measureme vawiness.  4 4 4 nologies. The 4 3 cal application s, liquids and pplied science 4 3 4 s of machines OS, TS desig

applications of production machines and equipment.

Code of the group: 06Q1/B2342--/FSI19P

Name of the group: 6. B TZSI - Oborový projekt II.

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 at least 1 course (at most 18)

Credits in the group: 4

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2382122	Branch Project II. Barbora Stieberová	KZ	4	0P+4C+0L		PV
2372122	Branch Project II. Vladimír Hlavá (Gar.)	KZ	4	0P+4C+0L		PV

2022122	Branch Project II. Zuzana Budinská <b>Zuzana Budinská</b>	KZ	4	0P+4C+0L		PV
2112122	Branch Project II.  Miroslav Španiel, Jan ezní ek, Karel Vítek, Tomáš Mareš, Karel Doubrava, Ctirad Novotný, Zden k Padovec, Martin Nesládek, Michal Bartošák, Tomáš Mareš Miroslav Španiel (Gar.)	KZ	4	0P+4C+0L		PV
2122122	Branch Project II.  Hana Schmirlerová, Michal Schmirler Michal Schmirler (Gar.)	KZ	4	0P+4C+0L		PV
2132122	Branch Project II. František Lopot, Karel Petr, Marek Štádler, Roman Uhlí, Eliška Cézová, Martin Dub, Jan Flek, Martin Havlí ek, Jan Hoidekr, František Lopot František Lopot (Gar.)	KZ	4	0P+4C+0L		PV
2152122	Branch Project II. Ond ej Bartoš, Tomáš Dlouhý, Jan Havlík, Michal Kolovratník, Jan Opat il, Pavel Skopec, Mat j Vodi ka, Pavel Zácha, Jan Syblík, Jan Prehradný	KZ	4	0P+4C+0L		PV
2162122	Branch Project II. Vladimír Zmrhal, Roman Vav i ka, Martin Barták, Vojt ch Zav el Martin Barták Martin Barták (Gar.)	KZ	4	0P+4C+0L	6	PV
2182122	Branch Project II. Radek Šulc, Stanislav Solna , Jan Sko ilas, Tomáš Jirout, Ji í Moravec, Lukáš Krátký, Jaromír Štancl Lukáš Krátký Lukáš Krátký (Gar.)	KZ	4	0P+4C+0L		PV
2212122	Branch Project II.  Petr Hatschbach, Gabriela Achtenová, Josef Kolá, Václav Jirovský, Libor ervenka, Jan Ban ek, Vít Beránek, Ivan Bortel, Vít Dole ek, Petr Hatschbach Old ich Vítek (Gar.)	KZ	4	0P+4C+0L	*	PV
2222122	Branch Project II.  Jakub Valenta, Jan Klesa, Jaroslav Kousal, Tomáš enský, Karel Barák, Ji í Brabec, Ji í Teichman	KZ	4	0P+4C+0L		PV
2242122	Branch Project II.  Matej Daniel, Lukáš Horný, Hynek Chlup Matej Daniel Matej Daniel (Gar.)	KZ	4	0P+4C+0L		PV
2312122	Branch project II. Václav Bauma, Zbyn k Šika, Michael Valášek, Petr Beneš, Martin Ne as, Zden k Neusser, Jan Pelikán, Pavel Steinbauer, Jan Zav el Michael Valášek Michael Valášek (Gar.)	KZ	4	0P+4C+0L	*	PV
2322122	Branch Project II.  Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Stanislav Krum, Jan Kr il, Jakub Horváth, Ladislav Cvr ek, Zde ka Jeníková, Jana Sobotová Jana Sobotová (Gar.)	KZ	4	0P+4C+0L		PV
2332122	Branch project II.  Ji í Kucha, Aleš Herman, František Tatí ek, Ladislav Kola ík, Viktor Kreibich,  Zden k Kopanica Ladislav Kola ík Aleš Herman (Gar.)	KZ	4	0P+4C+0L		PV
2342122	Branch Project II. Tomáš Kellner, Ji í Kyncl, Martin Kyncl	KZ	4	0P+4C+0L		PV
2352122	Branch Project II.  Vladimír Andrlík, Tomáš Krannich, Michal Fürbacher Tomáš Krannich  Vladimír Andrlík (Gar.)	KZ	4	0P+4C+0L		PV
2012122	Branch Project II.  Jan Halama, Ivana Linkeová, Marta Hlavová, Vladimír Prokop, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Ji í Fürst, Radka Keslerová, Ji í Fürst	KZ	4	0P+4C+0L	*	PV

Characteristics of the courses of this group of Study Plan: Code=06Q1/B2342--/FSI19P Name=6. B TZSI - Oborový projekt II.

2382122	Branch Project II.	KZ	4
2372122	Branch Project II.	KZ	4
Individual preparation	for a future bachelor thesis. Main task is a research of problematics, preparation of experiments, introduction on equipment, d	ata collection etc.	As a result,
student prepares a sh	ort report about his advances in the work.		
2022122	Branch Project II.	KZ	4
The conception of the	subject is on an individual base - the topics are related to the professional profile of students. Students are guided to the appl	ication of possess	ed knowledge in
solution of a given pro	blem together with an individual approach. The achieved results are presented in the end of semester, if they are supposed to	be a part of bach	elor thesis.
2112122	Branch Project II.	KZ	4
2122122	Branch Project II.	KZ	4
2132122	Branch Project II.	KZ	4
2152122	Branch Project II.	KZ	4
Design, construction,	project of a simple facility, device, machine, etc., from the field of compressors, cooling techniques, thermal insulation.		'
2162122	Branch Project II.	KZ	4
Project, dimensioning	and designing solution of basic elements for heating, ventilation and air conditioning plants, devices for air pollution control, air	feed and systems	with recoverable
source of heat.			
2182122	Branch Project II.	KZ	4
	n to selected technologies of process technology with a subsequent excursion. The work on a semester project focused on the	e issue of machine	s and apparatus
for the food, chemical	processing and ecology industries.		
2212122	Branch Project II.	KZ	4
Project training in solu	tion of design task based on industry requirements.		
2222122	Branch Project II.	KZ	4
The Branch Project a	signment is largely based on the practical needs of the industry or the research and development objectives of the university.	The content is a s	tructural design
of a selected part of the	e airplane structure including the creation of a 3D model of the designed structure, determination of the loading and the stress a	analysis, propositi	on and execution
of experiment on desi	gned part of structure (if required). The conclusion is a technical report describing the proposed solution		
2242122	Branch Project II.	KZ	4
2312122	Branch project II.	KZ	4

2322122	Branch Project II.	KZ	4			
2332122	Branch project II.	KZ	4			
2342122	Branch Project II.	KZ	4			
Work on specialized	asks.	•				
2352122	Branch Project II.	KZ	4			
The course is focused	e course is focused on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student will get acquainted with the problems					

of manufacturing machines and the equipment, respectively its parts according to the orientation of their work, and during regular weekly consultations with the supervisor proceed in professional solution of the problem. At the end of the semester students present their work on small oral examination in which they present the work performed, the coherence and meaning.

2012122 Branch Project II. KZ 4

Course consists of individual assignment. Student works under the guidance of supervisor. Regular meetings with supervisor are supposed each week of semestr. Student prepares the written report describing methods and results.

Code of the group: 06Q2/B2342--/FSI19P

Name of the group: 6. B TZSI - Bakalá ská práce

Requirement credits in the group: In this group you have to gain 8 credits

Requirement courses in the group: In this group you have to complete at least 1 course (at most 18)

Credits in the group: 8 Note on the group:

Note on the grou	Name of the course / Name of the group of courses			1		
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
2183992	Bachelor Thesis Radek Šulc, Martin Dostál, Stanislav Solna, Jan Sko ilas, Tomáš Jirout, Ji í Moravec, Lukáš Krátký, Jaromír Štancl Tomáš Jirout Tomáš Jirout (Gar.)	Z	8	0P+8C		PV
2373992	Thesis Vladimír Hlavá Vladimír Hlavá (Gar.)	Z	8	0P+8C	*	PV
2383992	Bachelor Thesis Št pánka Uli ná, Barbora Stieberová František Freiberg František Freiberg (Gar.)	Z	8	0P+2C		PV
2013992	Bachelor Thesis Jan Halama, Ivana Linkeová, Marta Hlavová, Jan Valášek, Lud k Beneš, Tomáš Bodnár, Ji í Fürst, Olga Majlingová, Tomáš Neustupa,	Z	8	0P+8C	*	PV
2023992	Bachelor Thesis Zuzana Budinská <b>Zuzana Budinská</b>	Z	8	0P+8C		PV
2113992	Bachelor Thesis Miroslav Španiel, Karel Vítek, Tomáš Mareš, Vilém Klepa Tomáš Mareš Miroslav Španiel (Gar.)	Z	8	0P+8C		PV
2313992	Bachelor Thesis Václav Bauma, Zbyn k Šika, Michael Valášek, Pavel Bastl, Petr Beneš, Ivo Bukovský, Martin Ne as, Zden k Neusser, Jan Pelikán, Michael Valášek Václav Bauma (Gar.)	Z	8	0P+8C		PV
2133992	Bachelor Thesis František Lopot František Lopot (Gar.)	Z	8	0P+8C		PV
2153992	Bachelor thesis Ond ej Bartoš, Tomáš Dlouhý, Václav Dostál, Jan Havlík, Michal Kolovratník, Jan Opat il, Pavel Skopec, Mat j Vodi ka, Pavel Zácha, Jan Št pánek	Z	8	0P+8C		PV
2163992	Bachelor Thesis Vladimír Šulc Vladimír Zmrhal Vladimír Zmrhal (Gar.)	Z	8	0P+8C	6	PV
2213992	Bachelor Thesis Petr Hatschbach, Gabriela Achtenová, Josef Kolá, Václav Jirovský, Jan Ban ek, Vít Beránek, Ivan Bortel, Vít Dole ek, Vojt ch Dybala, Petr Hatschbach Old ich Vítek (Gar.)	Z	8	0P+8C	*	PV
2223992	Thesis	Z	8	0P+8C		PV
2243992	Bachelor Thesis Matej Daniel Matej Daniel (Gar.)	Z	8	0P+8C		PV
2323992	Bachelor thesis Jakub Horník, Jana Sobotová, Ji í Cejp, Elena ižmárová, Stanislav Krum, Jan Kr il, Vladimír Mára, Jakub Horváth, Ta ana Vacková, Jana Sobotová Jana Sobotová (Gar.)	Z	8	0P+8C		PV
2333992	Bachelor thesis Ji í Kucha, Pavel Rohan, Barbora Bryksí Stunová, Aleš Herman, Bohumír Bedná, František Tatí ek, Jan ermák, Jaroslav ervený, Ladislav Kola ík, Ladislav Kola ík Aleš Herman (Gar.)	Z	8	0P+8C		PV
2343992	Thesis	Z	8	0P+8C		PV
2353992	Bachelor Thesis Petr Vavruška, Michal Stejskal, Petr Mašek, Tomáš Lazák, Mat j Sulitka, Ji í Švéda, Jaroslav ervenka, Lukáš Novotný Vladimír Andrlík Vladimír Andrlík (Gar.)	Z	8	0P+8C		PV
2123992	Thesis, Department of Fluid Dynamics and Thermodynamics  Michal Schmirler Michal Schmirler (Gar.)	Z	8	0P+8C		PV

Characteristics of the courses of this group of Study Plan: Code=06Q2/B2342--/FSI19P Name=6. B TZSI - Bakalá ská práce

2183992	Bachelor Thesis	Z	8
2373992	Thesis	Z	8
Each student will s	solve his individual theme under guiding of his individual supervising department specialist. Result is his/her bachel	lor thesis.	
2383992	Bachelor Thesis	Z	8
2013992	Bachelor Thesis	Z	8
2023992	Bachelor Thesis	Z	8
The aim of the sub	bject is to inform students with all general rules of final thesis formation and due to the regular consultations with ow	vn thesis supervisor to continue i	n professional
solution of a given	problem and on preparation of the own text of final thesis. Individual and active approach of students is expected.		
2113992	Bachelor Thesis	Z	8
2313992	Bachelor Thesis	Z	8
2133992	Bachelor Thesis	Z	8
2153992	Bachelor thesis	Z	8
Sachelor thesis is	final individual work. This work checks ability of logical independent technical thinking and treatment with technical	materials. There is applied acqui	red knowledge
rom previous stud	dy periods.		J
2163992	Bachelor Thesis	Z	8
Bachelor Thesis is	s final individual work. This work checks ability of logical independent technical thinking and treatment with technica	I materials. There is applied acqu	ired knowledge
from previous stud	ty periods		
	a) ponouo.		
	Bachelor Thesis	Z	8
2213992		Z	8
2213992 2223992	Bachelor Thesis	Z	8
2213992 2223992 The Bachelor Thes	Bachelor Thesis Thesis	Z of the university. The content is a s	8 structural desig
2213992 2223992 The Bachelor Thesof a selected part of	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of	Z of the university. The content is a sand the stress analysis, proposition	8 structural desig
2213992 2223992 The Bachelor Theor of a selected part of the experiment	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a	Z of the university. The content is a sand the stress analysis, proposition	8 structural desig
2213992 2223992 The Bachelor Thesof a selected part of the experiment 2243992	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working	Z of the university. The content is a sand the stress analysis, proposition out of the bachelor work.	8 structural desig on and executio
2213992 2223992 The Bachelor Thesof a selected part of the experiment 2243992 2323992	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working Bachelor Thesis	Z of the university. The content is a sand the stress analysis, proposition out of the bachelor work.	8 structural design and execution
2213992 2223992 The Bachelor Thesof a selected part of	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working Bachelor Thesis Bachelor thesis	of the university. The content is a sand the stress analysis, proposition out of the bachelor work.	8 structural desig on and executio 8
2213992 2223992 The Bachelor These of a selected part of the experiment of the exper	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working Bachelor Thesis Bachelor thesis Bachelor thesis	of the university. The content is a sand the stress analysis, proposition out of the bachelor work.  Z Z Z Z	8 structural desig on and executio  8 8 8
2213992 2223992 The Bachelor These of a selected part of the experiment of the exper	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working Bachelor Thesis Bachelor thesis Bachelor thesis Thesis	of the university. The content is a sand the stress analysis, proposition out of the bachelor work.  Z Z Z Z	8 structural desig on and executio  8 8 8 8
2213992 The Bachelor These of a selected part of the experiment of	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working Bachelor Thesis Bachelor thesis Bachelor thesis Thesis ation in the field. Databases and corporate literature. Normalization. Search activity. News from the field of engineer	of the university. The content is a sand the stress analysis, proposition out of the bachelor work.  Z Z Z Z	8 structural desig on and executio  8 8 8
2213992 2223992 The Bachelor These of a selected part of the experiment of the exper	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Workin Bachelor Thesis Bachelor thesis Bachelor thesis Thesis ation in the field. Databases and corporate literature. Normalization. Search activity. News from the field of engineer e principles of work safety in technological devices. Work on specialized tasks related to the focus of a thesis.	of the university. The content is a sand the stress analysis, proposition of out of the bachelor work.  Z Z Z z ing technology. Principles of reserved.	8 structural design and execution  8 8 8 8 earch and work
2213992 The Bachelor These of a selected part of the experiment of	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Workin Bachelor Thesis Bachelor thesis Bachelor thesis Thesis ation in the field. Databases and corporate literature. Normalization. Search activity. News from the field of engineer e principles of work safety in technological devices. Work on specialized tasks related to the focus of a thesis. Bachelor Thesis	of the university. The content is a sand the stress analysis, proposition of out of the bachelor work.  Z Z Z z ring technology. Principles of reservated with the general principles of	8 structural design and execution  8 8 8 8 earch and work 8 of the final thesi
2213992 2223992 The Bachelor These of a selected part of the experiment of the exper	Bachelor Thesis Thesis sis assignment is largely based on the practical needs of the industry or the research and development objectives of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading a with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working Bachelor Thesis Bachelor thesis Bachelor thesis Thesis ation in the field. Databases and corporate literature. Normalization. Search activity. News from the field of engineer e principles of work safety in technological devices. Work on specialized tasks related to the focus of a thesis. Bachelor Thesis es on processing the final thesis within the scope of the assigned topic of the bachelor thesis. The student is acquait	of the university. The content is a sand the stress analysis, proposition of out of the bachelor work.  Z Z Z z ring technology. Principles of reservated with the general principles of	8 structural design and execution and execution 8 8 8 8 example 8 structural design and execution and execution and execution and execution are structurally as a second and execution and execution are structurally as a second and execution are structurally as a second and execution are structurally as a second are structurally as a s

Name of the block: Jazyky

Minimal number of credits of the block: 2

The role of the block: J

Code of the group: 04J2/B2342--/FSI15P

Name of the group: 4. B TZSI

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 at least 1 course (at most 5)

Credits in the group: 2 Note on the group:

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

Characteristics of the courses of this group of Study Plan: Code=04J2/B2342--/FSI15P Name=4. B TZSI

2041061	English-Bachelor Exam	Z,ZK	2	1
Mapped to the Common	European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater diff	iculties, to take pa	ert in discussions,	l
to write a summary a re	port and an essay to read technical texts, to master grammar at advanced level			

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

# List of courses of this pass:

	Name of the course	Completion	Credits
2011009	Mathematics III	Z,ZK	5
	An introductory course in ordinary differential equation and infinite series.		'
2011018	Constructive Geometry	Z,ZK	5
	The subject is focused on geometric objects in the space - curves, surfaces and solids and their properties and mutual relation		1
2011067	Mathematics I.	Z,ZK	6
In the course, grea	ter emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connectior	ns between concep	ts. Student
will also get to know	the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: e	eigennumbers and e	eigenvector
	of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.		
2011068	Mathematics II.	Z,ZK	6
-	set, boundary in E^k. Real function of k-variables. Partial derivatives and differentiability. Gradient and directional derivative. Different		
	Function given implicitly. Local and global (= absolute) extremes of a function of more variables. Double integral, volume (=triple) integral,		
	r, cylindrical and spherical coordinates. A simple smooth curve and line integral of a scalar and vector function. Circulation and Green	•	
tiela, 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 vector	or field through a st	urrace. The
	Gauss-Ostrogradskij theorem.	7.714	
2011715	Mathematical Modeling in Technical Applications	Z,ZK	3
	thematic models for basic engineering problems. Basic principles of solution by means of mathematical modeling, numerical mathematical solution by the solution of the solutio		-
i nis course will inti	roduce finite difference, finite volume and finite element methods including different topology of domain discretization (meshes). Nume	ericai simulations w	viii be aime
0040005	at the solution of engineering problems of continuum mechanics.	1/7	
2012035	Algorithmization and Programming Fundamentals	KZ	4
	MATLAB and its programming language. MATLAB command line. Elementary commands, variable, assignment and expression. Matr		
	nput and output. Condition and cycle. Algorithmization of simple problems in MATLAB. Graphical commands. Matrix operations. Syste		
	ructure of program. Variables, expressions, assignment, and input / output commands. switch. For cycle. Arrays and files. Pointers. St	ŭ	
	s: minimum, mean, norm, numerical integration, bisection method, Newton method, matrix operations. Direct methods for solution of		
2012122	Branch Project II.	KZ	4
		1	
Course consists of	f individual assignment. Student works under the guidance of supervisor. Regular meetings with supervisor are supposed each week the written report describing methods and results.	1	
2013044		1	
2013044	the written report describing methods and results.	of semestr. Stude	nt prepares
2013044	the written report describing methods and results.  Mathematics Repetitory	of semestr. Stude	nt prepares
2013044 Lessons are inten	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the	of semestr. Stude	nt prepares
2013044 Lessons are inten	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.	of semestr. Student Z ory and a variety o	nt prepares 2 f exercises
2013044 Lessons are inten 2013066 Students will learn	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics	Z ory and a variety o	nt prepares  2 f exercises  2 ity models,
2013044 Lessons are inten 2013066 Students will lear multivariate randon	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random	Z ory and a variety o  Z variables, probabilianalysis, paramete	ty models, er estimatio
2013044 Lessons are inten  2013066 Students will lear multivariate random, hypothesis testin	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random a variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimen	2 if exercises  2 ity models, er estimation onts, perform
2013044 Lessons are inten  2013066 Students will lear multivariate random, hypothesis testin	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random a variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the results.	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimen	2 if exercises  2 ity models, er estimation onts, perform
2013044 Lessons are inten  2013066 Students will lear multivariate random, hypothesis testin	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment.	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimen	2 if exercises  2 ity models, er estimation onts, perform
2013044 Lessons are inten 2013066 Students will lear multivariate randon , hypothesis testin parameter estimat	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimentent. Also importan	try models, per estimation is, perform it is the use
2013044 Lessons are inten 2013066 Students will learn multivariate randon , hypothesis testin parameter estimat 2013992 2021014	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment.	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimentent. Also importan  Z Z,ZK	2 if exercises  2 ity models, er estimation hts, perform this the use
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2013044 Lessons are inten 2013066 Students will learn multivariate randon , hypothesis testin parameter estimat 2013992 2021014 The subject gives s (for example lase)	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenoments.	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimentent. Also importan  Z Z,ZK na in technological solid state physics,	2 if exercises  2 ity models, er estimation its, performit is the use  8 3 application liquids and
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2013044 Lessons are inten 2013066 Students will learn multivariate randon , hypothesis testin parameter estimat 2013992 2021014 The subject gives s (for example lase)	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency g, regression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessm of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenomer is, electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge in sitted with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties.	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimentent. Also importan  Z Z,ZK na in technological solid state physics,	2 if exercises  2 ity models, er estimation hts, perform it is the use  8 3 application liquids and
2013044 Lessons are inten  2013066 Students will learn multivariate randon , hypothesis testin parameter estimate  2013992 2021014 The subject gives so (for example laser they will be acquain	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency gregession analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenomer is, electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge in stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future stated with modern method of diagnostics of their properties.	Z ory and a variety o  Z variables, probabili analysis, paramete esults of experimentent. Also importan  Z Z,ZK na in technological solid state physics, tudy program Appli  Z,ZK	transfer of the second of the
2013044 Lessons are inten  2013066 Students will learn multivariate randon , hypothesis testin parameter estimat  2013992 2021014 The subject gives s (for example laser they will be acquain  2021026 Kinematics and dyn	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency gregession analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenomer is, electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge in sinted with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future strip in Mechanical Engineering.  Physics I	Z variables, probabili analysis, paramete esults of experimentent. Also importante in technological solid state physics, tudy program Appli  Z,ZK perties of bodies. O	transfer of the property of th
2013044 Lessons are inten  2013066 Students will learn multivariate randon , hypothesis testin parameter estimat  2013992 2021014 The subject gives s (for example laser they will be acquain  2021026 Kinematics and dyn waves. Fluid me	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency gregession analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenomer is, electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge in stated with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state of a particle motion. Principle of conservation of energy. System of particles, centre of mass. Rigid body. Continuum, elastic pro-	Z variables, probabili analysis, paramete esults of experimentent. Also importantel  Z Z,ZK na in technological solid state physics, tudy program Appli  Z,ZK operties of bodies. Conductors, semicon	transport of the property of t
2013044 Lessons are inten  2013066 Students will learn multivariate randon , hypothesis testin parameter estimat  2013992 2021014 The subject gives s (for example laser they will be acquain  2021026 Kinematics and dyn waves. Fluid me	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random in variable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency gregories in analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the resion based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenomer as, electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge in some attention of the properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics	Z variables, probabili analysis, paramete esults of experimentent. Also important  Z Z,ZK na in technological solid state physics, tudy program Appli  Z,ZK operties of bodies. Operations of the measurements, and the measurements, and the measurements, and the measurements.	transport of the property of t
2013044 Lessons are inten  2013066 Students will lear multivariate randon , hypothesis testin parameter estimat  2013992 2021014 The subject gives s (for example laser they will be acquain  2021026 Kinematics and dyn waves. Fluid me	the written report describing methods and results.  Mathematics Repetitory  ded for students who expect problems at exams from mathematics. Lessons have a form of seminary with a short introduction to the ranging sometimes even from level of grammar school and aimed mainly to Mathematics I and III.  Basics of Stochastics  In the basics of probability theory (random experiment, probability, random variable, probability distribution, characteristics of random nariable and its characteristics, laws of large numbers and limit theorems) and the basic principles of statistical inference (frequency gregression analysis and more). The application of this knowledge we can found in all areas where it is necessary to evaluate the region based on measurements, application of stochastic simulation methods, prediction of random processes and time series assessment of these methods for the control of quality, reliability and risk assessment.  Bachelor Thesis  Physics - Selected Topics  students a deeper and wider knowledge of selected parts of fundamental physics courses with respect to usage of physical phenomer is, electron beams, roentgen diffraction, thermophysical properties of matter). Students can achieve and deepen their knowledge in some the dwith modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile students for a physical topics in a future state with modern method of diagnostics of their properties. The subject professionally profile stud	Z variables, probabili analysis, paramete esults of experimentent. Also importantel  Z Z,ZK na in technological solid state physics, tudy program Appli  Z,ZK operties of bodies. Conductors, semicon	transport of the property of t

of radiation with matter. Photoelectric effect. Wave-particle mature of matter. Quantum-mechanical description of particle's motion. Hydrogen atom and periodic system of elements. Spectra, x-rays, ;laser. Band theory of solids, semiconductors. Nucleus, radioactivity, sources of nuclear energy. Laboratories - measurements of 6 experiments related to the lectures.

2022122	Branch Project II.	KZ	4
•	ne subject is on an individual base – the topics are related to the professional profile of students. Students are guided to the applicati		•
	n problem together with an individual approach. The achieved results are presented in the end of semester, if they are supposed to l		_
2023012	Practical Class in Physics II	Z	2
	ed for students who need more detailed practising and improvement (including knowledge from former physics coursess, or high-scl Physics II course. The instructions are analogical to seminars with a short corresponding theoretical background. The link between p		-
Successiui iiriisiiirig	of solution of typical problems is underlying.	nysicai concepts a	and methods
2023013	Practical Class in Physics I	Z	2
	ed for students who need more detailed practising and improvement (including knowledge from former physics coursess, or high-scl	_	1
•	Physics I course. The instructions are analogical to seminars with a short corresponding theoretical background. The link between p		-
3	of solution of typical problems is underlying.	,	
2023992	Bachelor Thesis	Z	8
	ject is to inform students with all general rules of final thesis formation and due to the regular consultations with own thesis supervis	_	-
•	solution of a given problem and on preparation of the own text of final thesis. Individual and active approach of students is expe	· · · · · · · · · · · · · · · · · · ·	
2041061	English-Bachelor Exam	Z,ZK	2
Mapped to the Comr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul		discussions
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.	•	
2041062	German - Bachelor Exam / FME	Z,ZK	2
Mapped to the Comr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	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 Comr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	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
Mapped to the Comr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	ies, to take part in	discussions,
	to write a summary, a report and an essay, to read technical texts, to master grammar at advanced level.		
2041065	Russian - Bachelor Exam / FME	Z,ZK	2
Mapped to the Comr	mon European Framework Level B2. The aim is to understand spoken language and lectures on technical topics without greater difficul	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.		
2111103	Strenght of Materials II	Z,ZK	5
This course is to	provide an advanced analysis of machine members. It also provides the prerequisite for other special courses concerning the theorems.	y of elasticity and	plasticity.
2111505	Selected Items of Strenght of Materials	Z,ZK	3
2112122	Branch Project II.	KZ	4
2113992	Bachelor Thesis	Z	8
2121046	Thermomechanics	Z,ZK	5
	s. Real gases and vapours, reversible and irreversible processes. Cycles of typical motors and machines. Moist air. Fundamentals of of chemical reactions. Basic cases of heat transfer. Steady heat conduction. Heat convection. Similarity, a criterion equation. Heat transfer. Heat exchangers. Thermal radiation. Combined cases of heat transfer. Heat exchangers.		
2121047	Hydro a Thermodynamics	Z,ZK	4
	, ,		
2121502	Fluid Dynamics	Z,ZK	5
2122122	Branch Project II.	KZ	4
2123992	Thesis, Department of Fluid Dynamics and Thermodynamics	Z	8
2131023	Engineering Design II.	Z,ZK	5
	PS (Geometrical Products Specification). Students will get critical knowledge about ISO system of limits and fits, tolerancing, surface		
	os, tolerancing of angles and cones, tolerancing of threads. Integral part of course is a project where students apply and practice the		
2131026	Machine Elements and Mechanisms II	ZK	3
Preliminary design, o	design calculations and aplication of axles and shafts, sliding and rolling bearings, shaft connections, elements of crank mechanism,	pipelines and their	accessories
0404000	and fittings.	7.716	1 .
2131060	Transport Technology	Z,ZK	4
2131512	Machine Elements and Mechanisms I.	Z,ZK	6
	ements (screwed, clamped, splined, welded, riveted, soldered and adhesive joints; joints with use of feathers, pins, tenons, cotters, ke		
•	on, gear drives). Seminars are devoted to practical individual solution of simple design projects - tasks with motion screws, preloaded	•	•
pressed, spilned and	d key joints between shafts and hubs and tasks with welded and riveted joints. Sketching of machine elements and their simple assen seminar work.	ibly utilis is also in	luisperisable
2122020		V7	2
2132030	History of Technology	KZ	3
0400004	text	1/7	
2132031	Engineering Design I.	KZ	3
	Basic of technical representation, dimensioning and tolerancing.	1/7	
	Branch Project II.	KZ	4
2132122	Engineering Design III.	Z	2
2132122 2133013			
2133013	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)	1	
		Z	2
2133013 2133014 2133025	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)  Engineering Design IV.  Design	Z	2 4
2133013 2133014 2133025 Design,	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)  Engineering Design IV.	Z	
2133013 2133014 2133025	Design of assembly unit (draft drawing, detail drawing, assembly drawing, technical report)  Engineering Design IV.  Design	Z	

2141504	Electric Circuits and Electronics	Z,ZK	4
	heory of electrical circuits, analysis special types of electrical circuits as DC and AC. Transient states in circuits with accumulators of e		1
Introduction into	electronics. Principle and typical parameters of basic semiconductor components. Application in electronic circuits (rectifier, stabilized		perational
04.44.505	amplifier). Analogue and digital circuits. Principle of analogue and digital signal processing. Logical circuits, converters, micropro		
2141505	Electrical machines and drives ectrical power and energy. Calculation, measurement, power factor. Magnetic circuit, materials, hysteresis loop. Electromagnet. Transf	Z,ZK	4
	mer, operating conditions, rated (scheduled) values. Induction machine, principle, construction, operating conditions. Starting, speed-		
•	us machines. DC-machines, principle, parameters, operating conditions, construction, starting, speed control, speed-torque character	=	-
,	Low-voltage distribution system.	3.	
2151705	Renewables energy sources	Z,ZK	4
The course deals v	with overview of the currently used renewable energy sources. In a wider context, it concerns with their domestic as well as world-wide	potential, possibi	lities of their
	ssible impacts on the environment. The course discusses in deeper details some of them, especially are emphasized the source havir		
Czech Republic	- this is mostly hydropower, wind energy, solar energy and energy from biomass. Other renewable energy sources are to a smaller ex	tent discussed as	well, e.g.
0.4.50.4.00	geothermal energy, tidal energy, etc.		
2152122	Branch Project II.	KZ	4
2452005	Design, construction, project of a simple facility, device, machine, etc., from the field of compressors, cooling techniques, thermal in		
2153005	Fundamentals of Energy Conversions	Z	1
2153992	Bachelor thesis	Z	8 knowledge
bachelor thesis is	final individual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is from previous study periods.	s applied acquired	Kilowieuge
2161022	Environmental Engineering	Z,ZK	4
2101022	Application of a theory in environmental engineering	2,21	' '
2162122	Branch Project II.	KZ	4
-	ing and designing solution of basic elements for heating, ventilation and air conditioning plants, devices for air pollution control, air feed	· ·	recoverable
	source of heat.		
2163992	Bachelor Thesis	Z	8
Bachelor Thesis is	final individual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is	s applied acquired	knowledge
	from previous study periods.		
2181026	Momentum, Mass and Heat Transfer	Z,ZK	5
	transport phenomena balances in homogeneous fluids. Navier-Stokes equations. Momentum transport in turbulent flows. Mechanical		
unie distributions in	continuous systems. Conduction heat transfer. Forced and natural convection heat transfer. Heat transfer with phase changes and thei systems. Mass transfer by molecular diffusion, convection, with chemical reactions and interphase mass transfer.	mai radiation, ividii	licomponent
2181125	Process equipment and production lines	Z,ZK	3
2182019	Chemistry	KZ	3
	ry from the point of view of mechanical and process engineering. Physical chemistry forms 2/3 of the course (structure and properties		-
	n, chemical reactions, reaction engineering), the remaining 1/3 is devoted to organic chemistry (hydrocarbons, polymers) and biocher		- 1
	oriented upon the material properties measurement.		
2182122	Branch Project II.	KZ	4
Theoretical introdu	ction to selected technologies of process technology with a subsequent excursion. The work on a semester project focused on the iss	ue of machines an	d apparatus
2402044	for the food, chemical, processing and ecology industries.		
2183014	Progressive Processes of Energy Utilization ubject is to introduce the fields of study in bachelor study programs "Engineering" and "Theoretical Fundamentals in Mechanical Engineer	Z pring" Student get	2
	in Environmental, Power and Process Engineering. In the field of Environmental Engineering, fundamentals of heating, ventilation, co		
	rs and protection against dust and noise are presented. As for Power Engineering, heat and electricity production from fossil and rene	-	
needs and applica	tions of these energy forms in the industrial and private sectors are discussed. In the field of Process Engineering, technologies, made	hines and equipm	ent in food,
consumer and cher	mical industries, pharmacy, biotechnologies and waste treatment technologies are presented. Based on this information, student gets fi	nally more detailed	information
	during the processing of a brief seminar paper on selected topic, in which she/he is interested in.		
2183992	Bachelor Thesis	Z	8
2211130	Transport Engineering	Z,ZK	4
	port systems - characteristics, distribution and application vehicles. Characteristics of transport routes and dimensions of vehicles on the		- 1
and nachon chara	acteristics of the vehicles. Analysis of the driving cycle. Internal combustion engines - classification, characteristics, characteristics. Me with a drive mechanism. The function of basic structural units and groups of vehicles.	anous of power tra	21101110510I1
2212122	Branch Project II.	KZ	4
2212122	Project training in solution of design task based on industry requirements.	IV.	' '
2213014	Transportation and Aerospace Technology	Z	2
Design and testing	g of ground transportation vehicles, control systems, aircraft structures and propulsions. Selected topics of transportation and aerospa	ace technology are	presented
in seminars and by	means of laboratory exercises. Information about possibility of master study and project work at CTU, trainee and internship in reputable	ole firms, both in tra	ansportation
	and aerospace technology.		
2213992	Bachelor Thesis	Z	8
2221221	Aeronautics and Astronautics	Z,ZK	4
	nded as an introductory course in the field of aircraft technology for bachelor students. The course serves as a theoretical support of the structure of a server technology of the structure of aircraft structure.		
	raft technology aimed at aircraft structures, engines and space. The first block is focused on obtaining an overview of aircraft structur production technologies and aircraft systems. The second block introduces the basics of aerodynamics. The follow-up enginer sectior	•	- 1
anoran materials,	types of aircraft propulsion units. The second block introduces the basics of aerodynamics. The follow-up enginer section types of aircraft propulsion units. The space section presents input information inthe field of space technology.	asalo with the pil	pioo and
2222122	Branch Project II.	KZ	4
	at assignment is largely based on the practical needs of the industry or the research and development objectives of the university. The		
of a selected part o	of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading and the stress analy		nd execution
	of experiment on designed part of structure (if required). The conclusion is a technical report describing the proposed solution	n	

2223992	Thesis	Z	8		
	s assignment is largely based on the practical needs of the industry or the research and development objectives of the university. The	content is a struc	tural design		
of a selected part of the airplane structure including the creation of a 3D model of the designed structure, determination of the loading and the stress analysis, proposition and execution					
of the experiment with designed part of structure under the leadership of consultants and supervisors of the work (if required). Working out of the bachelor work.					
2241068	Biomechanics for Bachelors	Z,ZK	3		
2242122	Branch Project II.	KZ	4		
	·	Z			
2243992	Bachelor Thesis		8		
2311083	Selected Topics of Mechanics and Mechatronics	Z,ZK	4		
2311101	Mechanics I.	Z,ZK	4		
Mechanics I deals v	rith the basic concepts of statics. There are described the methods of solution of equilibrium of particles and rigid bodies and their sys	tems with and with	hout friction.		
	There are introduced the methods of description of position and motion of particles and rigid bodies.				
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 by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and their systems are described by the dynamics of mass particle and body motion and the dynamics of mass particle and body motion and the dynamics of mass particle and body motion and the dynamics of mass particle and dynamics of mass particl	ribed. Methods fo	r describing		
	and solving vibrations of systems.				
2312122	Branch project II.	KZ	4		
2313028	Career in Engineering	Z	2		
'	The goal is to teach the principles of engineering, tits fundamental concepts, personal profile and career procedure in industrial en	terprize.	ı		
2313040	Introduction into applied mechanics and mechatronics	Z	2		
2313992	Bachelor Thesis	 Z	8		
2321039	Materials Science II.	Z,ZK	4		
Fundamentals of m	etallurgy, iron-carbon alloys and influence of other elements, phase transformations, thermal, combined chemical and thermal and the		processing,		
	technical iron-carbon alloys, non-ferrous metals and their alloys, plastics, structural ceramics, composites, selection of materia				
2321500	Technical Materials I	Z,ZK	4		
2322029	Materials Science I.	KZ	3		
History and prese	nt state of materials engineering, overview of technical materials, internal structure of metals, crystal lattices and their defects, defori	mation, recrystalliz	zation and		
fracture of mate	rials, structure and properties of materials and their testing, fundamentals of thermodynamics, phases and phase transformations, in	on-carbon phase o	diagram.		
2322122	Branch Project II.	KZ	4		
2323014	Materials of the 21st Century	Z	2		
The subject is focus	ed on characterization of structural and functional materials, which are currently used in technical practice. Attention is paid to technic	logical methods o	f production		
of a	dvanced materials, prediction and own evaluation of their properties. In addition, development trends for individual types of materials	are discussed			
2323992	Bachelor thesis	Z	8		
2331075	Design Consideration	Z,ZK	4		
	construction, production technology and economic aspects. Product design with regard to casting, forming, welding, machining and	•	1		
	s for choosing material and technology. Structural modifications of parts with regard to quality and production possibilities. Use of CN	-	.09.00		
2332122	Branch project II	K7	1		
2332122	Branch project II.	KZ	4		
2333008	Fundamental of Technology I.	Z	2		
2333008 2333040	Fundamental of Technology I.  Perspective Production in Engineering	Z Z	2		
2333008 2333040 The subject focuse	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced modern trends in production management.	Z Z aterials, testing of	2 2 f materials,		
2333008 2333040 The subject focuse	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video	Z Z aterials, testing of	2 2 f materials,		
2333008 2333040 The subject focuse energy production	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced m and presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.	Z Z aterials, testing of os, and tours to the	2 2 f materials, e high-tech		
2333008 2333040 The subject focuse	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video	Z Z aterials, testing of	2 2 f materials,		
2333008 2333040 The subject focuse energy production	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced m and presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.	Z Z aterials, testing of os, and tours to the	2 2 f materials, e high-tech		
2333008 2333040 The subject focuse energy production 2333992 2341001	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis	Z Z aterials, testing of os, and tours to the Z Z,ZK	2 2 f materials, e high-tech 8 5		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. M	2 2 f materials, e high-tech 8 5 easurement		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and seco	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. M	2 2 f materials, e high-tech 8 5 easurement		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration	Fundamental of Technology I.  Perspective Production in Engineering as on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondriantes. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structure.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. M	2 2 f materials, e high-tech 8 5 easurement		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates	Fundamental of Technology I.  Perspective Production in Engineering as on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structumes and their applications. Geometrical automatisation.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mure - roughness, w Z,ZK	2 2 f materials, e high-tech  8 5 easurement rawiness.		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates	Fundamental of Technology I.  Perspective Production in Engineering as on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structuments automatisation.  Technology II.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mure - roughness, w Z,ZK	2 2 f materials, e high-tech  8 5 easurement rawiness.		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates of chip for the subject of the subje	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structum Measurement automatisation.  Technology II.  ormation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economor programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mare - roughness, w Z,ZK nics. Automation of	2 2 f materials, e high-tech  8 5 leasurement rawiness.  5 f processes,		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structum Measurement automatisation.  Technology II.  ormation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economics.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mure - roughness, w Z,ZK	2 2 f materials, e high-tech  8 5 easurement rawiness.		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates of chip for 2342122	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structum Measurement automatisation.  Technology II.  ormation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economor programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.  Branch Project II.  Work on specialized tasks.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mare - roughness, w Z,ZK nics. Automation o	2 2 f materials, e high-tech  8 5 easurement rawiness.  5 f processes,		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates of chip for 2342122 2343010	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structum Measurement automatisation.  Technology II.  Dermation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economon programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.  Branch Project II.  Work on specialized tasks.  Fundamentals of Technology II.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mare - roughness, w Z,ZK nics. Automation o	2 2 f materials, e high-tech  8 5 easurement rawiness.  5 f processes,  4 2		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates of chip for chi	Fundamental of Technology I.  Perspective Production in Engineering es on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and secondinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structuments automatisation.  Technology II.  Dermation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economorprogramming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.  Branch Project II.  Work on specialized tasks.  Fundamentals of Technology II.  Inining. Principle of cutting process. Working parameters. Cutting tools - general characteristics, geometry, designation and symbols. The production of the wadvanced management advanced management, development of new advanced material videous processes.	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mare - roughness, w Z,ZK nics. Automation o KZ Z de basic machining	2 2 f materials, e high-tech  8 5 leasurement rawiness.  5 f processes,  4 2 g processes,		
2333008 2333040 The subject focuse energy production 2333992 2341001 Metrology, intergration in 1, 2, end 3 coordinates of chip for the coordinate coordinates of the coordinate coordinates of the coordin	Fundamental of Technology I.  Perspective Production in Engineering as on the teaching of advanced engineering technology, modern trends in production management, development of new advanced mand presentation of the virtual factory. Classes will be a combination of practical nature of work in laboratories FS, instructional video material-working.  Bachelor thesis  Metrology on into quality control, legal metrology, metrology system. Geometrical quantities metrology. Measurement uncertainty. Primary and seconordinates. Laserinterferometres and their applications. Geometrical surface properties. Form - and position deviations. Surface structus Measurement automatisation.  Technology II.  Technology II.  Dermation, cutting processes, finishing operations, non-traditional machining processes. Production rates calculation, machining economomory programming of manufacture. Engineering metrology. Assembly techniques. Introduction to process planing.  Branch Project II.  Work on specialized tasks.  Fundamentals of Technology II.  Inining. Principle of cutting process. Working parameters. Cutting tools - general characteristics, geometry, designation and symbols. Tranics, equipment, conditions, material removal rate determination. The shapes produced, commercial tolerance and surface finish of	Z Z aterials, testing of os, and tours to the Z Z,ZK ndary standarts. Mare - roughness, w Z,ZK nics. Automation o KZ Z te basic machining tained. Laboratori	2 2 f materials, e high-tech  8 5 leasurement rawiness.  5 f processes,  4 2 g processes, es.		
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automation of pr	oduction machines and equipment, industrial manipulators and robots, their applications, single-purpose and modular machines, pro applications of production machines and equipment.	oduction lines. Exa	mples of
2352122	Branch Project II.	KZ	4
	ed on elaboration of individual work, which student solves in close cooperation with the head of the assigned topic. The student will ge		
	achines and the equipment, respectively its parts according to the orientation of their work, and during regular weekly consultations	-	
•	on of the problem. At the end of the semester students present their work on small oral examination in which they present the work p	•	
•	. meaning.		
2353041	Practical introduction to production machines	Z	2
	s a practical introduction to production machines including modern CNC technologies and the basics of design considerations of con	nponents produced	
	will acquire the necessary knowledge of the production cycle of basic types of production machines as well as CNC machining cent		
echnologies and pi	oduction procedures used and determination of technological conditions. Students will also familiarize themselves with machine ope	ration, possibilities	of machine
and tool adjustment	, production proper, testing procedures and product measurement. Basic statistical and operational diagnostic methods of measuren	nent will also be de	monstrated
	(measurements of accuracy, force, noise, vibration, temperature etc.)		
2353992	Bachelor Thesis	Z	8
he course focuses	on processing the final thesis within the scope of the assigned topic of the bachelor thesis. The student is acquainted with the generation	ral principles of the	final thesis
and during regular	weekly consultations with the supervisor proceeds in the professional solution of the assigned problem and at the same time works		of the final
	thesis. In the course of the solution, the student completes a small oral presentation where the work in progress is presente	1	
2371110	Industrial Automation	Z,ZK	4
	lents will learn the basic principles of automated systems used in current industrial practice, especially focused on the use of advanc	•	-
=	ative. Specifically, these are PLCs and PLC networks, Distributed Control Systems (DCS) and Distributed Artificial Intelligence (DAI), R		
	controlled drives, Industrial sensors, Micro machining, Methods of system integration and MES systems, Human Machine Interface (Human Collection). Detabases and substances requirity. Data applying Machine vision (including extical processing and image propresses		-
	d Data Collection), Databases and cyber security, Data analysis, Machine vision (including optical processing and image preprocess		
2372041	Computer Support for Study ses students into creating technical and professional documents on computers or Web and into realizing technical computations with t	KZ	3
	es students into creating tecrinical and professional documents on computers of web and into realizing tecrinical computations with t Il skills by creating an essay in a text editor, by realizing technical computations with a spreadsheet calculator, and by creating technical		
<del> </del>		KZ	
2372083	Measurement in Engineering	l l	3
Overview of sens	or principles for measurement of non-electrical variables (temperature, position, force, speed, acceleration, torque). Calibration and instruments.	vernication of meas	surement
2372122	Branch Project II.	KZ	4
l l	ation for a future bachelor thesis. Main task is a research of problematics, preparation of experiments, introduction on equipment, dat		
marviduai prepan	student prepares a short report about his advances in the work.	a concension etc. 7 c	o a rosuit,
2373040	Robot Control Introduction	Z	2
	ces basic concepts and principles of robotics. Students will use construction kit for design, assemble and programme the robot. This	_	
	students of the second year of the bachelor study. There is no prerequisite for this subject.	,	
2373992	Thesis	Z	8
	Each student will solve his individual theme under guiding of his individual supervising department specialist. Result is his/her bache	l l	•
2381006	Methods and Tools for Managerial Decisionmaking	Z,ZK	3
he course is orien	ted to project management approach. During the course are solved cases that respond to practical situations. The cases are stresse	' '	alculations,
on the solving in	teractions among costs, capacity of resources and the price. And also on the calculation typical kinds of variations and their explanat	ion and the selecti	on of the
appropriate manag	erial decision. The students are concerning on the right way of operational budget creation and assessment. The link on the internal	company accountir	ng is shown
	and explain. The computerized models are used by explanation.		
2381054	Management and Economics of the Enterprise	Z,ZK	4
_	ned to give students the understanding of economic principles. The economical part of the course is consisted from: explanation of re	· ·	
	es and income, concept of investment and calculations per product, presentation how to assemble a basic operating budget and expl		
of the financial stat	ements. The management introduces the basic managerial functions and their contents, the uses of network analysis in project man	agement, with the	application
	of multi-criteria decision, the basics of marketing and strategic management.		
2382122	Branch Project II.	KZ	4
2383001	Fundamentals of Law	Z	2
	legal system is a necessary part of professional equipment of each expert with university degree. The aim of this course is to provide		- 1
• •	urces of law and system of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is not be a significant legal regulation of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is not be a significant legal regulation of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is not be a significant legal regulation of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations. It is not be a significant legal regulation of law (branch of law), using tutorials, lectures, specialised literature and significant legal regulations.	•	
-	ns, that will be regularly in touch with, especially during their professional career and to learn how to work with the collection of laws.		
eaus students to ki	now some practical habits and processes while putting the law on, especially in domain of contracts and other important legal relation to prepare professional presentations and to understand basic structures between law and engineering	snips and to make	lileili ready
2383020	Modern Management of Businesses and Projects	Z	2
	of the course is to introduce students to modern trends and approaches that have emerged in corporate governance in recent years	l l	
=	or the course is to introduce students to modern tiends and approaches that have emerged in corporate governance in recent years ne main technical and technological trends that will significantly transform the industry, its economic, environmental benefits and risks		
	it information systems for management and planning of business processes and for support of managerial decision-making. Furthern		
	oproaches and tools for production management and ends with issues of current trends in project management. The focus of the cou		
-	planation, but to provide a general view of current trends and approaches in key areas of corporate governance. The required depth	· ·	
	developed within individual courses in the Master's degree program.		
2383992	Bachelor Thesis	Z	8
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TVK-L	Physical Education Course	Z	1
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