Study plan

Name of study plan: 10 121 NSTI VSZ 2012 základ

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Welcome page Type of study: unknown Required credits: 137 Elective courses credits: -6 Sum of credits in the plan: 131 Note on the plan:

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 128 The role of the block: P

Code of the group: 12NS*1P-VSZ Name of the group: 2012 NSTI 1.sem povinné VSZ Requirement credits in the group: In this group you have to gain 34 credits Requirement courses in the group: In this group you have to complete 8 courses Credits in the group: 34 Note on the group:

Note on the grou	·p.					
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
2351158	Hydraulic and Pneumatic Systems Antonín Bubák, Tomáš Krannich Antonín Bubák Antonín Bubák (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2311075	Mechanics of Mechanisms Jan Pelikán, Václav Bauma, Petr Beneš, Zden k Neusser, Zbyn k Šika, Michael Valášek, Jan Zav el Zbyn k Šika Zbyn k Šika (Gar.)	ZK	4	3P+0C	*	Р
2141093	Microelectronics Lukáš Novák, Stanislava Papežová Stanislava Papežová Lukáš Novák (Gar.)	Z,ZK	3	2P+0C+1L	*	Р
2353111	Project 1. Josef Kekula, Petr Kolá, Mat j Sulitka, Vladimír Andrlík Vladimír Andrlík Vladimír Andrlík (Gar.)	Z	5	0P+5C+0L	*	Ρ
2312017	Controlled mechanical systems I. Václav Bauma, Zden k Neusser, Zbyn k Šika, Michael Valášek, Ivo Bukovský, Pavel Steinbauer Michael Valášek Michael Valášek (Gar.)	КZ	3	3P+0C	*	Р
2351054	Production Machines and Equipment Tomáš Krannich	Z,ZK	5	3P+0C+1L	*	Р

Characteristics of the courses of this group of Study Plan: Code=12NS*1P-VSZ Name=2012 NSTI 1.sem povinné VSZ

2351158	Hydraulic and Pneumatic Systems	Z,ZK	4			
Classification, principle and structure of hydraulic and pneumatic mechanisms (HPM). Transmission and conversion of energy. Design and function of hydraulic and pneumatic elements.						
Function of typical HPM. Proportional elements and their applications. Servomechanisms. Hydraulic and pneumatic drives. Assembly, operation and maintenance.						
2311075	11075Mechanics of MechanismsZK4					
2141093	Microelectronics	Z,ZK	3			
Basic characteristics of	logic circuits and programmable logical systems, input and output circuits - voltage and current matching, D/A and A/D conve	erters, coding, line	es and protocols			
of communications, elec	ctronic and optoelectronic parts for microelectronics, microprocessor system applications.					
2353111	Project 1.	Z	5			
Practicing of the design	of machine parts with an emphasis on understanding geometric and dimensional tolerances and surface roughness.		•			
2312017	Controlled mechanical systems I.	KZ	3			
2351054	Production Machines and Equipment	Z,ZK	5			
Manufacturing machine	s and equipment contains three basic parts. These are forming machines, machine tools and industrial robots and manipulat	ors. Characteristi	cs of machines			
and equipment for realization of discrete technological processes will be explained, technical parameters, basics of construction of production machines and equipment, construction						
of machine tools, TS design, automation of production machines and equipment, industrial manipulators and robots, their applications, single-purpose and modular machines, production						
lines. Examples of appli	cation of production machines and equipment.					

Code of the group: 12NS*2P-VSZ

Name of the group: 2012 NSTI 2.sem povinné VSZ Requirement credits in the group: In this group you have to gain 33 credits Requirement courses in the group: In this group you have to complete 7 courses Credits in the group: 33 Note on the group:

Note on the group	J.					
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
2311074	Vibrations of Mechanical Systems Václav Bauma, Zbyn k Šika, Michael Valášek, Jan Zav el Václav Bauma Václav Bauma (Gar.)	ZK	4	3P+0C	*	Р
2351084	Numerical Control of Production Machines and Equipment Control Petr Vavruška Petr Vavruška (Gar.)	Z,ZK	4	2P+0C+2L	*	Р
2351121	Drives of Production Machines - Servomechanisms I Vojt ch Matyska, Jan Moravec Vojt ch Matyska Vojt ch Matyska (Gar.)	Z,ZK	4	3P+0C+1L	*	Р
2353112	Project II Tomáš Krannich Tomáš Krannich Tomáš Krannich (Gar.)	Z	5	0P+5C+0L	*	Р

Characteristics of the courses of this group of Study Plan: Code=12NS*2P-VSZ Name=2012 NSTI 2.sem povinné VSZ

2311074	Vibrations of Mechanical Systems	ZK	4			
2351084	Numerical Control of Production Machines and Equipment Control	Z,ZK	4			
Numerical controled cu	Numerical controled cutting machines, means of programming, coordinate systems, ISO code. NC program, its creating using CAD/CAM layers, postprocessors. CNC inner structu					
interaction of its parts, of	control system modes. Real-time operating systems.					
2351121	Drives of Production Machines - Servomechanisms I	Z,ZK	4			
Mathematical apparatus	ofor signal processing in drives of NC machines and robots, sampling, Fourier and Laplace transforms, Laplace images of typi	cal functions and t	ransfer functions			
of drive components. Se	ensors of quantities in drives, auxiliary el. circuits, filters. Vibration suppression in NC machines. Pulse excitation.					
2353112	Project II	Z	5			
The course is focused of	The course is focused on the design of forming machines and on the design of the whole automated workplace. The design and design of the drives is designed with respect to a wide					
range of selected machine types. Depending on the product, the machine is designed first and then the entire workplace. The project has the character of a study and takes place in						
teams. The thesis is finally defended by all members						

Code of the group: 12NS*3P-VSZ

Name of the group: 2012 NSTI 3.sem povinné VSZ

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 6 courses

Credits in the group: 31

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2351122	Servomechanisms of Production Machines Vojt ch Matyska, Jan Moravec, Lukáš Novotný Lukáš Novotný Vojt ch Matyska (Gar.)	Z,ZK	4	3P+0C+1L	*	Ρ
2353113	Project III Petr Kolá	Z	10	0P+10C+0L	*	Р

Characteristics of the courses of this group of Study Plan: Code=12NS*3P-VSZ Name=2012 NSTI 3.sem povinné VSZ

2351122	Z,ZK	4					
Actuator in servomechanisms (hydraulic motors and electric motors), control equipment. Transmission mechanisms of production machines feed drives. Increasing of feed drive axes							
dynamics, special kinem	dynamics, special kinematics arrangement. Dynamic model of feed drive axis. Vibration suppression in feed drive axes.						
2353113 Project III Z 10							

Code of the group: 12NS*4P-VSZ

Name of the group: 2012 NSTI 4.sem povinné VSZ Requirement credits in the group: In this group you have to gain 30 credits Requirement courses in the group: In this group you have to complete 7 courses Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2353998	Diploma Project Tomáš Krannich, Petr Kolá, Vladimír Andrlík, Petr Vavruška, Michal Stejskal, Michal Fürbacher, Jan Brajer, Eduard Stach Petr Kolá Vladimír Andrlík (Gar.)	Z	10	0P+10C+0L	*	Ρ
2351123	Drives of Production Machines - Servomechanisms III. Lukáš Novotný, Ji í Švéda Ji í Švéda Ji í Švéda (Gar.)	Z,ZK	4	3P+0C+1L	*	Р
2353890	Project IV. Vladimír Andrlík	Z	4	0P+10C+0L	*	Р
2351087	Industrial Robots and Manipulators Tomáš Krannich, Vladimír Andrlík, Ji í Švéda Vladimír Andrlík Vladimír Andrlík (Gar.)	Z,ZK	3	2P+0C+1L	*	Р
2383062	Budget and Project Economic Assessment František Freiberg, Miroslav Žilka František Freiberg František Freiberg (Gar.)	Z	2	1P+2C	*	Р

Characteristics of the courses of this group of Study Plan: Code=12NS*4P-VSZ Name=2012 NSTI 4.sem povinné VSZ

2353998	Diploma Project	Z	10			
The course focuses on processing the final thesis within the scope of the assigned topic of the bachelor thesis. The student is acquainted with the general 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 on the actual text of the final						
thesis. In the course of the solution, the student completes a small oral presentation where the work in progress is presented.						
2351123	Drives of Production Machines - Servomechanisms III.	Z,ZK	4			
2353890	Project IV.	Z	4			
Constructional and computational processing of real tasks of motion nodes and systems. A high level of creative thinking and innovative designs and practices are required. The tasks						
have a direct link to indu	ustrial practice and its needs. The second part is focused on the design of machine tool construction nodes (eg cradle, milling	g head, quill). The	aim is to create			
a real construction node	of a machine tool with all design calculations and drawing documentation in the form of a design drawing according to the e	entered parameter	·S.			
2351087	Industrial Robots and Manipulators	Z,ZK	3			
Construction of industria	al robots and manipulators, kinematic structures, various types of driving units, moving units, end effectors.					
2383062	Budget and Project Economic Assessment	Z	2			
The goal of the course i	s to improve the knowledge gained within the basic bachelor's degree course Management and Economics of the Enterprise	. The course focu	ses primarily on			
deepening of basic know	wledge and skills in the creation and evaluation of the operational budget, proper preparation and evaluation of costing mode	el for manufacture	d products and			
the economic evaluation	n of an investment project, as it corresponds to contemporary knowledge and the development of management methods and	techniques. Stud	ents specify a			
simple fictional industria	I or engineering company or its sub-section (preferably inspired by their practical experience, internships or training program ir	n real company). T	he first student's			
task is to prepare a deta	task is to prepare a detailed plan and budget of a project (e.g. new product development, product or process innovation, etc.) focused on improvement of profitability, competitiveness					
or effectiveness of the company. The second task is cost calculation for chosen calculation unit. Last task within this course is the evaluation of economical effectiveness of the project						
described within the first task. The dynamic methods like Net Present Value (NPV), Internal Rate of Return (IRR) or Discounted Payback Period (DPP) are used for this evaluation.						
The quality of realization	n and presentation of the task's outputs together with the results of the test decides on granting / denial of credit.					

Name of the block: Compulsory elective courses Minimal number of credits of the block: 3 The role of the block: PV

Code of the group: 12N**3Q--JV

Name of the group: 2012 N 3.sem povinná jazyková výuka

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

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

Credits in the group: 2

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2043081	English - Preparatory Course / FME Veronika Kratochvílová, Eliška Vítková, Ilona Šimice, Michaela Schusová, Hana Volejníková Nina Procházková Ayyub	Z	2	0P+2C	*	PV
2043086	Czech - Preparatory Course Michaela Schusová, Hana Volejníková, Petr Laurich	Z	2	0P+2C	*	PV
2043083	French - Preparatory Course / FME Michaela Schusová, Dušana Jirovská Michaela Schusová Dušana Jirovská (Gar.)	Z	2	0P+2C	*	PV
2043082	German - Lower Intermediate Course Eliška Vítková, Michaela Schusová, Petr Laurich, Jaroslava Kommová Jaroslava Kommová Jaroslava Kommová (Gar.)	Z	2	0P+2C	*	PV
2043085	Russian - Preparatory Course / FME Michaela Schusová, Hana Volejníková, Dušana Jirovská Eliška Vítková	Z	2	0P+2C	*	PV
2043084	Spanish - Preparatory Course / FME Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková	Z	2	0P+2C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12N**3Q--JV Name=2012 N 3.sem povinná jazyková výuka

2043081	English - Preparatory Course / FME	Z	2		
Aim: Understanding cle	Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about				
familiar topics. Reading and comprehension of simple texts. Improvement of professional language. European level A1 - A2.					
2043086	Czech - Preparatory Course	Z	2		
Aim: Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a sir	nple way about		
familiar topics. Reading	and comprehension of simple texts. Improvement of professional language.				
2043083	French - Preparatory Course / FME	Z	2		
Aim: Understanding cle	arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	m. Writing in a sir	nple way about		
familiar topics. Reading and comprehension of simple texts. Improvement of professional language.					
lamilar topics. Reading	and complementation of simple texts, improvement of professional language.				
2043082	German - Lower Intermediate Course	Z	2		
2043082 Mapped to the level of C	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic	Z h a student meets	2 s either at school		
2043082 Mapped to the level of C or in his/her free time at	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	Z h a student meets nt of professional	2 s either at school language.		
2043082 Mapped to the level of C or in his/her free time at 2043085	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic ad speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme Russian - Preparatory Course / FME	Z h a student meets nt of professional Z	2 s either at school language. 2		
2043082 Mapped to the level of C or in his/her free time an 2043085 Aim: Understanding clea	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme Russian - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	Z h a student meets nt of professional Z m. Writing in a sir	2 either at school language. 2 nple way about		
2043082 Mapped to the level of C or in his/her free time at 2043085 Aim: Understanding clea familiar topics. Reading	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme Russian - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language.	Z h a student meets nt of professional Z m. Writing in a sir	2 s either at school language. 2 nple way about		
2043082 Mapped to the level of C or in his/her free time at 2043085 Aim: Understanding clea familiar topics. Reading 2043084	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme Russian - Preparatory Course / FME arrly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language. Spanish - Preparatory Course / FME	Z h a student meets nt of professional Z m. Writing in a sir Z	2 s either at school language. 2 nple way about 2		
2043082 Mapped to the level of C or in his/her free time at 2043085 Aim: Understanding clea familiar topics. Reading 2043084 Aim: Understanding clea	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme Russian - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language. Spanish - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	Z h a student meets nt of professional Z m. Writing in a sir Z m. Writing in a sir	2 s either at school language. 2 nple way about 2 nple way about		
2043082 Mapped to the level of C or in his/her free time at 2043085 Aim: Understanding clea familiar topics. Reading 2043084 Aim: Understanding clea familiar topics. Reading	German - Lower Intermediate Course Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement Russian - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language. Spanish - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language. Spanish - Preparatory Course / FME arly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the and comprehension of simple texts. Improvement of professional language.	Z h a student meets nt of professional Z m. Writing in a sir Z m. Writing in a sir	2 s either at school language. 2 nple way about 2 nple way about		

Code of the group: 12N**3Q--JZ

Name of the group: 2012 N 3.sem povinná jazyková zkouška Requirement credits in the group: In this group you have to gain 1 credit Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 1 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
2041081	English - Master Exam Veronika Kratochvílová, Eliška Vítková, Ilona Šimice, Michaela Schusová, Hana Volejníková, Michele Le Blanc, Nina Procházková Ayyub Nina Procházková Ayyub Ilona Šimice (Gar.)	ZK	1	0P+0C	*	PV
2041086	Czech- Master Exam Michaela Schusová, Hana Volejníková, Petr Laurich	ZK	1	0P+0C	*	PV
2041083	French - Master Exam / FME Michaela Schusová, Dušana Jirovská Dušana Jirovská (Gar.)	ZK	1	0P+0C	*	PV
2041082	German - Master Exam / FME Eliška Vítková, Michaela Schusová, Petr Laurich, Jaroslava Kommová Jaroslava Kommová Jaroslava Kommová (Gar.)	ZK	1	0P+0C	*	PV
2041085	Russian - Master Exam / FME Michaela Schusová, Hana Volejníková, Dušana Jirovská Eliška Vítková	ZK	1	0P+0C	*	PV
2041084	Spanish - Master Exam / FME Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková Jaime Andrés Villagómez (Gar.)	ZK	1	0P+0C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12N**3Q--JZ Name=2012 N 3.sem povinná jazyková zkouška

	1			
Mapped to the level of Common European Framework of Reference: A2. Aim: Understanding clearly what is spoken about everyday situations which a student meets at school				
his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.				
2041086 Czech- Master Exam ZK	1			
2041083 French - Master Exam / FME ZK	1			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student m	ets either at school			
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of profession	nal language.			
2041082 German - Master Exam / FME ZK	1			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student m	ets either at school			
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of profession	nal language.			
2041085 Russian - Master Exam / FME ZK	1			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student m	ets either at school			
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of profession	nal language.			
2041084 Spanish - Master Exam / FME ZK	1			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school				
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.				

Name of the block: Elective courses Minimal number of credits of the block: 6 The role of the block: V

Name of the group: 2012 NSTI 1.sem volitelné VSZ doporu ené Requirement credits in the group: In this group you have to gain 3 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 3

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
2356024	CAD in Production Machine Design Jaroslav ervenka	Z	3	0P+3C+0L	*	V

Characteristics of the courses of this group of Study Plan: Code=12NS*1V-VSZ Name=2012 NSTI 1.sem volitelné VSZ doporu ené

2356024CAD in Production Machine DesignZ3Basics of modeling in Siemens NX. Sketching of basic 2D geometry and creation of 3D models. Creating rotating and non-rotating parts and generating 2D drawings (views, sections,
dimensions, geometric tolerances). Creating assemblies and subassemblies and creating assembly drawings with positions, generating parts lists. Creating weldments and machined
welds. Creating parametric models, using "Synchronous technology" and other special functions.

Code of the group: 12NS*2V-VSZ

Name of the group: 2012 NSTI 2.sem volitelné VSZ doporu ené Requirement credits in the group: In this group you have to gain 3 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 3

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
2356025	Simulation Production Machine Antonín Bubák Antonín Bubák (Gar.)	Z	3	0P+0C+3L	*	V

Characteristics of the courses of this group of Study Plan: Code=12NS*2V-VSZ Name=2012 NSTI 2.sem volitelné VSZ doporu ené

 2356025
 Simulation Production Machine
 Z
 3

 Learning outcomes of the course unit The subject is aimed at gaining information about fundamentals of modeling of parts and whole machines by finite element method, preparation of geometry for FEM model, creation of free and mapped mesh, definition of boundary conditions, calculations of properties of single bodies.

List of courses of this pass:

Code	Name of the course	Completion	Credits			
2041081	English - Master Exam	ZK	1			
Mapped to the lev	Mapped to the level of Common European Framework of Reference: A2. Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in					
his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.						
2041082	German - Master Exam / FME	ZK	1			
Mapped to the leve	Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school					
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.						
2041083	French - Master Exam / FME	ZK	1			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school						
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.						
2041084	Spanish - Master Exam / FME	ZK	1			
Mapped to the leve	l of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a	student meets eith	er at school			
or in his/her free	time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement	nt of professional la	anguage.			
2041085	Russian - Master Exam / FME	ZK	1			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school						
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.						
2041086	Czech- Master Exam	ZK	1			
2043081	English - Preparatory Course / FME	Z	2			
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about						
familiar topics. Reading and comprehension of simple texts. Improvement of professional language. European level A1 - A2.						
2043082	German - Lower Intermediate Course	Z	2			
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school						
or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.						

2043083	French - Preparatory Course / FME	Z	2					
Aim: Understandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about					
20//308/ Spanich Proparatory Course / EME 7 0								
Aim: Understandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	∣	e way about					
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		-					
2043085	Russian - Preparatory Course / FME	Z	2					
Aim: Understandin	g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	e way about					
2042086	tamiliar topics. Reading and comprehension of simple texts. Improvement of professional language.	7	2					
2043000 Aim: Understandin	CZECII - PTEPATAIOLY COULSE a clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them	∣ ∠ Writing in a simple	∠ wav about					
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	titling in a simple	, nay about					
2141093	Microelectronics	Z,ZK	3					
Basic characteristic	s of logic circuits and programmable logical systems, input and output circuits - voltage and current matching, D/A and A/D converted	ers, coding, lines ar	nd protocols					
0044074	of communications, electronic and optoelectronic parts for microelectronics, microprocessor system applications.	71/						
2311074	Vibrations of Mechanical Systems	ZK	4					
2311075	Mechanics of Mechanisms	ZK	4					
2312017	Controlled mechanical systems I.	KZ	3					
2351054 Manufacturing ma	Production Machines and Equipment chines and equipment contains three basic parts. These are forming machines, machine tools and industrial robots and manipulators	Characteristics of	5 f machinas					
and equipment for	realization of discrete technological processes will be explained, technical parameters, basics of construction of production machines	s and equipment.	construction					
of machine tools, T	S design, automation of production machines and equipment, industrial manipulators and robots, their applications, single-purpose and	modular machines	, production					
	lines. Examples of application of production machines and equipment.							
2351084	Numerical Control of Production Machines and Equipment Control	Z,ZK	4					
Numerical controle	d cutting machines, means of programming, coordinate systems, ISO code. NC program, its creating using CAD/CAM layers, postpro	ocessors. CNC inn	er structure,					
0054007	interaction of its parts, control system modes. Real-time operating systems.	7 71/	0					
2351087	Industrial Robots and Manipulators Construction of industrial robots and manipulators, kinematic structures, various types of driving units, moving units, and effect	Z,ZK	3					
2251121	Construction of industrial robots and manipulators, kinematic structures, validus types of unking units, moving units, end ener		1					
Mathematical appa	ratus for signal processing in drives of NC machines and robots, sampling. Fourier and Laplace transforms, Laplace images of typical fi	unctions and transi	fer functions					
	of drive components. Sensors of quantities in drives, auxiliary el. circuits, filters. Vibration suppression in NC machines. Pulse exc	citation.						
2351122	Servomechanisms of Production Machines	Z,ZK	4					
Actuator in servor	echanisms (hydraulic motors and electric motors), control equipment. Transmission mechanisms of production machines feed drives	Increasing of feed	d drive axes					
	dynamics, special kinematics arrangement. Dynamic model of feed drive axis. Vibration suppression in feed drive axes.							
2351123	Drives of Production Machines - Servomechanisms III.	Z,ZK	4					
2351158	Hydraulic and Pneumatic Systems	L Z,ZK	4					
Classification, princ	appeared structure of hydraulic and pneumatic mechanisms (HPM). Transmission and conversion of energy, Design and function of hydr of typical HPM. Proportional elements and their applications. Servomechanisms, Hydraulic and pneumatic drives. Assembly, operatic	aulic and pheumat	elements.					
2353111	Project 1	7	5					
2000111	Practicing of the design of machine parts with an emphasis on understanding geometric and dimensional tolerances and surface ro	ughness.	Ŭ					
2353112	Project II	Z	5					
The course is focus	ed on the design of forming machines and on the design of the whole automated workplace. The design and design of the drives is d	esigned with respe	ect to a wide					
range of selected	machine types. Depending on the product, the machine is designed first and then the entire workplace. The project has the character	of a study and tak	es place in					
teams. The thesis is finally detended by all members								
2353113		Z 7	10					
Constructional and	Computational processing of real tasks of motion nodes and systems. A high level of creative thinking and innovative designs and pro-	∠ actices are require	d The tasks					
have a direct link to industrial practice and its needs. The second part is focused on the design of machine tool construction nodes (en cradle milling head guill). The aim is to create								
a real const	ruction node of a machine tool with all design calculations and drawing documentation in the form of a design drawing according to the	he entered parame	eters.					
2353998	Diploma Project	Z	10					
The course focuses	s on processing the final thesis within the scope of the assigned topic of the bachelor thesis. The student is acquainted with the gener	ral principles of the	e final thesis					
and during regula	r weekly consultations with the supervisor proceeds in the professional solution of the assigned problem and at the same time works	on the actual text	of the final					
2256024	CAD in Production Machine Docign	a. 7	2					
Basics of modeling	in Siemens NX. Sketching of basic 2D geometry and creation of 3D models. Creating rotating and non-rotating parts and generating	2D drawings (view	vs. sections.					
dimensions, geome	etric tolerances). Creating assemblies and subassemblies and creating assembly drawings with positions, generating parts lists. Crea	iting weldments an	d machined					
welds. Creating parametric models, using "Synchronous technology" and other special functions.								
2356025	Simulation Production Machine	Z	3					
Learning outcomes	s of the course unit The subject is aimed at gaining information about fundamentals of modeling of parts and whole machines by finite	e element method,	preparation					
2292062 Rudget and Project Economic Accessment 7 2								
200002 Dudget and Project Economic Assessment and Economics of the Enterprise. The course focuses primarily on								
deepening of basic knowledge and skills in the creation and evaluation of the operational budget, proper preparation and evaluation of costing model for manufactured products and								
the economic evaluation of an investment project, as it corresponds to contemporary knowledge and the development of management methods and techniques. Students specify a								
simple fictional indu	strial or engineering company or its sub-section (preferably inspired by their practical experience, internships or training program in rea	al company). The fi	rst student's					
task is to prepare a detailed plan and budget of a project (e.g. new product development, product or process innovation, etc.) focused on improvement of profitability, competitiveness of the company. The second task is cost calculation for chosen calculation unit. Last task within this course is the cyclustion of oconomical effectiveness of the project								
described within the first task. The dynamic methods like Net Present Value (NPV). Internal Rate of Return (IRR) or Discounted Pavback Period (DPP) are used for this evaluation								
The quality of realization and presentation of the task's outputs together with the results of the test decides on granting / denial of credit.								
L		i ne quality of realization and presentation of the task's outputs together with the results of the test decides on granting / denial of credit.						

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u>

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