Study plan

Name of study plan: 14 141 NSTI AME 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: 132 Elective courses credits: -8 Sum of credits in the plan: 124

Note on the plan:

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 91

The role of the block: P

Code of the group: 12NS*1P-AME

Name of the group: 2012 NSTI 1.sem povinné AME

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

Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 26 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
2013054	Mathematics for Mechanics	Z	4	3P+1C	*	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
2312017	Controlled mechanical systems I. Václav Bauma, Zden k Neusser, Zbyn k Šika, Michael Valášek, Ivo Bukovský, Pavel Steinbauer Michael Valášek Michael Valášek (Gar.)	KZ	3	3P+0C	*	Р
2121016	Theoretical Fluid Mechanics Tomáš Hyhlík Tomáš Hyhlík (Gar.)	ZK	4	3P+0C	*	Р

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

2013054 | Mathematics for Mechanics

Summary: Tensor calculus. Introduction to functional analysis. Calculus of variations. Orthogonal transformation of coordinate systems. Afinne orthogonal tensors and tensor operations. Tensor as linear operator and bilinear form. Metrics and metric spaces. Convergence. Completness. Linear normed space. Banach space. Linear space with scalar product (unitary space). Hilbert space. Contractive operators and Banach fixed point theorem. Function spaces in examples. Operators and functionals. Linear, continuous and bounded operator/functional. Derivative of a functional in the given direction. Gateaux differential and derivative. Necessary and sufficient conditions for extremes of a functional. Convex set and convex functional. Minimum of convex functional. Extremes of functional of different types. Euler equation. Necessary and sufficient conditions for extrema. Discrete methods for approximation of the minima of an functional. Ritz method.

	2311075	Mechanics of Mechanisms	_ ∠K	4			
	2141093	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 converters, coding, lines and protocols						
of communications, electronic and optoelectronic parts for microelectronics, microprocessor system applications.							
	2312017	Controlled mechanical systems I	K7	3			

2312017 Controlled mechanical systems i. KZ 3
2121016 Theoretical Fluid Mechanics

The study subject aim is to expand the students knowledge gained from the previous subject Thermomechanics Alfa. The attention is focussed namely on fluids characteristics, various

description methods of fluid dynamics under low and high Re number values, boundary layer characteristics and its stability and complex flow characteristics for incompressible flow.

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

Name of the group: 2012 NSTI 2.sem povinné AME

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

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

Credits in the group: 26 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
2142027	Electrical Engineering for Applied Mechanics Stanislava Papežová Stanislava Papežová (Gar.)	KZ	3	2P+0C+1L	*	Р
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
2123018	Heat and Mass Transfer Pavel Sláma	Z	2	2P+0C	*	Р
2311076	Simulation of Mechatronic Systems Jan Pelikán, Václav Bauma, Zbyn k Šika, Michael Valášek, Jan Zav el Zbyn k Šika Zbyn k Šika (Gar.)	ZK	3	2P+0C	*	Р
2111049	Theory of elasticity Dušan Gabriel Dušan Gabriel (Gar.)	ZK	4	3P+0C	*	Р
2121055	Thermodynamics Tomáš Hyhlík Tomáš Hyhlík (Gar.)	ZK	4	3P+0C	*	Р

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

2142027	Electrical Engineering for Applied Mechanics	KZ	3			
The purpose of the coul	The purpose of the course is to give the student knowledge about different types of electrical drives for mechatronic systems and their practical use. Method for electromagnetic field					
approximative solution.	approximative solution. The theory of linear and rotating drivers. Electromagnets supplied by AC and DC power. Static and dynamics parameters of electromagnets. Drives for rotating					
motion. DC motors. Mathematical description of their static and dynamic properties. Principle and function of stepper motor. AC induction motors. Mathematical description of their						
static and dynamic prop	erties. Using MATLAB for drivers behaviour modelling.					

2311074	Vibrations of Mechanical Systems	ZK	4		
2123018	Heat and Mass Transfer	Z	2		
The course extends the knowledge gained in the subject Thermomechanics Alfa especially in the area of heat transfer. Attention is paid to more complex cases (non-stationary,					
multidimensional problems) as well as to processes where heat transfer is accompanied by simultaneous mass transfer (mixing exchangers)					

	, (3 3 -)		
2311076	Simulation of Mechatronic Systems	ZK	3
2111049	Theory of elasticity	ZK	4

The objective of this course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mechanics courses such as theory of plates and shells or continuum mechanics. This course introduces the basic definitions of stress and strain tensors used in the linear theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor, postulates the constitutive relations for linear elastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation expressed in terms of the displacement vector and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cylindrical coordinate systems is considered and the Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam using the Airy stress function in the form of a polynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrated vertical force action on a horizontal straight boundary, the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in solid mechanics is presented including the principles of virtual displacements and virtual forces.

2121055 Thermodynamics ZK 4

The aim of the course is to expand the students' knowledge gained from the previous course Thermomechanics Alfa in the areas of the real gas thermodynamics, irreversible process thermodynamics, multiphase- and multicomponent system characteristics and thermodynamics cycles of the real heat engines and machines also.

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

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

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
2111083	Continuum Mechanics Jií Plešek Jií Plešek Jií Plešek (Gar.)	ZK	4	3P+0C	*	Р
2121043	Computational Fluid Mechanics Tomáš Hyhlík	ZK	4	3P+0C	*	Р
2311079	Statistical Mechanics Václav Bauma, Zbyn k Šika, Michael Valášek, Ivo Bukovský Ivo Bukovský Ivo Bukovský (Gar.)	ZK	4	3P+0C	*	Р

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

2111083	Continuum Mechanics	ZK	4			
2121043	ZK	4				
This course extends the knowledge gained in the course of Fluid Mechanics about the knowledge of computational fluid dynamics. Emphasis is placed on understanding the basic						
principles of computation	principles of computational fluid dynamics based on using commercial codes. Selected problems of internal and external aerodynamics are solved.					
2311079	Statistical Mechanics	ZK	4			

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

Name of the group: 2012 NSTI 4.sem povinné AME

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

Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 21 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2121056	Gas Dynamics Michal Schmirler Michal Schmirler (Gar.)	ZK	4	3P+0C	*	Р
2311091	System Identification Václav Bauma, Zden k Neusser, Zbyn k Šika, Michael Valášek, Jan Zav el Zbyn k Šika Zbyn k Šika (Gar.)	ZK	3	2P+0C	*	Р
2111035	Finite Element Method II. Miroslav Španiel Miroslav Španiel (Gar.)	ZK	3	2P+0C	*	Р
2383062	Budget and Project Economic Assessment František Freiberg, Miroslav Žilka František Freiberg František Freiberg (Gar.)	Z	2	1P+2C	*	Р
2311019	Synthesis and Optimization of Mechanical Systems Václav Bauma, Petr Beneš, Zbyn k Šika, Michael Valášek, Jan Zav el Zbyn k Šika Zbyn k Šika (Gar.)	ZK	3	2P+0C	*	Р
2311084	Advanced Dynamics Václav Bauma, Zbyn k Šika, Michael Valášek, Jan Zav el, Tomáš Vampola Tomáš Vampola Tomáš Vampola (Gar.)	ZK	3	2P+0C	*	Р
2113017	Basic of Engineering Experimentals Pavel Steinbauer, Karel Doubrava, Václav Uruba Karel Doubrava Karel Doubrava (Gar.)	Z	3	2P+1C	*	Р

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

2121056	Gas Dynamics	∠K	4			
The study subjects aim	is to expand the students' knowledge gained from the previous Alfa versions of the bachelors subjects Fluid Mechanics and	Thermomechanic	s. It generalizes			
the findings in the scope of compressible fluid flow; the attention is focussed on the several non-isentropic cycles as well as fundaments of non-stationary and multidimensional flows.						

2311091	System Identification	ZK	3
2111035	Finite Element Method II.	ZK	3
2383062	Budget and Project Economic Assessment	Z	2

The goal of the course is to improve the knowledge gained within the basic bachelor's degree course Management 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 industrial or engineering company or its sub-section (preferably inspired by their practical experience, internships or training program in real company). The first 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 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 and presentation of the task's outputs together with the results of the test decides on granting / denial of credit.

2311019	Synthesis and Optimization of Mechanical Systems	ZK	3
2311084	Advanced Dynamics	ZK	3
2113017	Basic of Engineering Experimentals	Z	3

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 41

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:

	Name of the course / Name of the group of courses	Completion	Crodite	Scono	Somostor	Role
Code	members) Tutors, authors and guarantors (gar.)	Completion	Ciedits	Scope	Semester	Kole
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 (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 Villadómez Eliška Vítková	Z	2	0P+2C	*	PV

2043004	Michaela Schusová, Jaime Andrés Villagómez Eliška Vítková	_	2	06+20		PV
Characteristics (of the courses of this group of Study Plan: Code=12N**3QJV Name	e=2012 N 3.s	em povi	nná jazyko	ová výi	uka
2043081	English - Preparatory Course / FME				Z	2
Aim: Understanding of	learly what is spoken about everyday situations which a student meets at school or in his/her	free time and sp	eaking abo	ut them. Writi	ng in a si	mple way about
familiar topics. Readir	ng and comprehension of simple texts. Improvement of professional language. European level	A1 - A2.				
2043086	Czech - Preparatory Course				Z	2
Aim: Understanding of	learly what is spoken about everyday situations which a student meets at school or in his/her	free time and sp	eaking abo	ut them. Writi	ng in a si	mple way about
familiar tonics Readir	ng and comprehension of simple texts. Improvement of professional language.					
iamiliai topics. Readii	5					
<u> </u>	French - Preparatory Course / FME				Z	2
2043083		free time and sp	eaking abo	ut them. Writii	Z ng in a si	_
2043083 Aim: Understanding o	French - Preparatory Course / FME	free time and sp	eaking abo	ut them. Writing	Z ng in a si	_
2043083 Aim: Understanding of familiar topics. Readir	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her	free time and sp	eaking abo	ut them. Writi	Z ng in a si	_
2043083 Aim: Understanding of familiar topics. Readin 2043082 Mapped to the level of	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her ag and comprehension of simple texts. Improvement of professional language.	ge about everyda	ay situation:	s which a stud	Z dent mee	mple way about 2 ts either in the
2043083 Aim: Understanding of familiar topics. Readin 2043082 Mapped to the level of company or in his/her	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her ag and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course f Common European Framework of Reference A2 Aim: Understanding clearly spoken langua free time and speaking about them. Writing in a simple way about familiar topics. reading and c	ge about everyda	ay situation:	s which a stud	Z dent mee	mple way about 2 ts either in the
2043083 Aim: Understanding of familiar topics. Readin 2043082 Mapped to the level of company or in his/her 2043085	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her ag and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course f Common European Framework of Reference A2 Aim: Understanding clearly spoken langua	ge about everyda	ay situation: simple texts	s which a stud . Improvemen	Z dent meet t of profes	mple way about 2 ts either in the ssional language
2043083 Aim: Understanding of familiar topics. Reading 2043082 Mapped to the level of company or in his/her 2043085 Aim: Understanding of	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her ag and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course f Common European Framework of Reference A2 Aim: Understanding clearly spoken langua free time and speaking about them. Writing in a simple way about familiar topics. reading and c Russian - Preparatory Course / FME	ge about everyda	ay situation: simple texts	s which a stud . Improvemen	Z dent meet t of profes	mple way about 2 ts either in the ssional language
2043083 Aim: Understanding of familiar topics. Reading 2043082 Mapped to the level of company or in his/her 2043085 Aim: Understanding of	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her ag and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course f Common European Framework of Reference A2 Aim: Understanding clearly spoken langua free time and speaking about them. Writing in a simple way about familiar topics. reading and c Russian - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her	ge about everyda	ay situation: simple texts	s which a stud . Improvemen	Z dent meet t of profes	mple way about 2 ts either in the ssional language
2043083 Aim: Understanding of familiar topics. Readir 2043082 Mapped to the level of company or in his/her 2043085 Aim: Understanding of familiar topics. Readir 2043084	French - Preparatory Course / FME learly what is spoken about everyday situations which a student meets at school or in his/her and comprehension of simple texts. Improvement of professional language. German - Lower Intermediate Course of Common European Framework of Reference A2 Aim: Understanding clearly spoken language free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehension of simple texts. Improvement of professional language.	ge about everyda omprehesion of s free time and sp	ay situation: simple texts eaking abo	s which a stuc . Improvemen ut them. Writin	Z dent mee t of profes Z ng in a si	mple way about 2 ts either in the ssional language 2 mple 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

Characteristics of the courses of this group of Study Flan. Code=12N 3Q-3Z Name=2012 N 3.Sem povinila jazykova zkodska								
2041081	English - Master Exam	ZK	1					
Mapped to the level of 0	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 sp	eaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement	of professional lar	nguage.					
2041086	Czech- Master Exam	ZK	1					
2041083	French - Master Exam / FME	ZK	1					
Mapped to the level of C	common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic	h a student meets	s either at school					
or in his/her free time a	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	nt of professional	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 meets either at school								
or in his/her free time ar	nd speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	nt of professional	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 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 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.

Code of the group: 12NS*1Q-AME

Name of the group: 2012 NSTI 1.sem 1povvol AME Projekt I.

Requirement credits in the group: In this group you have to gain 5 credits

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

Credits in the group: 5 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2113111	Project I. Miroslav Španiel Miroslav Španiel (Gar.)	Z	5	0P+5C	*	PV
2313111	Project I. Václav Bauma, Zden k Neusser, Zbyn k Šika, Michael Valášek, Jan Zav el Zbyn k Šika Zbyn k Šika (Gar.)	Z	5	0P+5C	*	PV
2123111	Project I. Tomáš Hyhlík (Gar.)	Z	5	0P+5C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12NS*1Q-AME Name=2012 NSTI 1.sem 1povvol AME Projekt I.

2113111	Project I.	Z	5
2313111	Project I.	Z	5
2123111	Project I.	Z	5

The aim of the course for the students is to apply their knowledge of mechanics, elasticity and strength and fluid mechanics to a complex task consisting in design of controlled mechanism according to required function, dimensioning of selected member in terms of stiffness and durability, environmental assessment and control design. The student is led to master a suitable combination of analytical and numerical methods. At the same time, topics from subjects taught in the 1st semester of the program are discussed within the contact hours.

Code of the group: 12NS*2Q-AME

Name of the group: 2012 NSTI 2.sem 1povvol AME Projekt II.

Requirement credits in the group: In this group you have to gain 5 credits

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

Credits in the group: 5 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
2113112	Project II. Miroslav Španiel, Karel Doubrava, Michal Bartošák, Karel Vítek, Martin Nesládek, Milan R ži ka, Ji í Kuželka, Zden k Padovec, Tomáš Mareš, Ctirad Novotný Miroslav Španiel (Gar.)	Z	5	0P+5C	*	PV
2313112	Project II. Jan Pelikán, Václav Bauma, Zbyn k Šika, Michael Valášek, Jan Zav el, Pavel Steinbauer, Ctirad Novotný Zbyn k Šika Zbyn k Šika (Gar.)	Z	5	0P+5C	*	PV
2123112	Project II. Michal Schmirler (Gar.)	Z	5	0P+5C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12NS*2Q-AME Name=2012 NSTI 2.sem 1povvol AME Projekt II.

2113112	Project II.	Z	5
2313112	Project II.	Z	5
2123112	Project II.	Z	5

The aim of the course for student is to solve the technical task assigned according to his specialization and focus. The task is focused on more advanced work with contemporary means of engineering analysis from commercial programs of FEM and fluid analysis, through Matlab to creation of in-house programs. The project continues and extends the knowledge acquired in subjects taught in the 2nd semester.

Code of the group: 12NS*3Q-AME

Name of the group: 2012 NSTI 3.sem 1povvol AME Projekt III.

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
2113113	Project III. Miroslav Španiel, Karel Doubrava, Michal Bartošák, Karel Vítek, Martin Nesládek, Milan R ži ka, Ji í Kuželka, Zden k Padovec, Tomáš Mareš, Miroslav Španiel (Gar.)	Z	10	0P+10C	*	PV
2313113	Project III. Jan Pelikán, Václav Bauma, Petr Beneš, Zden k Neusser, Zbyn k Šika, Michael Valášek, Jan Zav el, Ivo Bukovský, Pavel Steinbauer, Zbyn k Šika Zbyn k Šika (Gar.)	Z	10	0P+10C	*	PV
2123113	Project III. Michal Schmirler Tomáš Hyhlík (Gar.)	Z	10	0P+10C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12NS*3Q-AME Name=2012 NSTI 3.sem 1povvol AME Projekt III.

2113113	Project III.	Z	10
2313113	Project III.	Z	10
Individual asignment		•	
2123113	Project III.	Z	10

This project is understood as preparation for the diploma thesis. The topic of the project and the way of its realization and the scope of the work is given by the pre-determined head of the thesis so that the student can follow it in his / her thesis. Completion of the project must always be verified by submitting a written report. Typically the project work can include: state of the art research acquiring theoretical and practical materials by compilation of literature, by visiting optional lectures, taking from potential partners. mastering the means for numerical or experimental modeling preparation and realization of experiments preparation of numerical models programming and more

Code of the group: 12NS*4Q-AME

Name of the group: 2012 NSTI 4.sem 1povvol AME Diplomová práce

Requirement credits in the group: In this group you have to gain 10 credits

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

Credits in the group: 10 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
2113998	Diploma Project Miroslav Španiel, Karel Doubrava, Michal Bartošák, Karel Vítek, Martin Nesládek, Milan R ži ka, Ji í Kuželka, Zden k Padovec, Tomáš Mareš, Tomáš Mareš Miroslav Španiel (Gar.)	Z	10	0P+10C	*	PV
2313998	Diploma project Jan Pelikán, Václav Bauma, Petr Beneš, Zden k Neusser, Zbyn k Šika, Michael Valášek, Jan Zav el, Ivo Bukovský, Pavel Steinbauer, Michael Valášek Michael Valášek (Gar.)	Z	10	0P+10C+0L	*	PV
2123998	Diploma Thesis Michal Schmirler Michal Schmirler (Gar.)	Z	10	0P+10C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12NS*4Q-AME Name=2012 NSTI 4.sem 1 povvol AME Diplomová práce

2113998	Diploma Project	Z	10	
2313998	Diploma project	Z	10	
individual assignment				
2123998	Diploma Thesis	Z	10	
The diploma thesis is a final independent work examining the ability of independent logical technical thinking, orientation in the given problem, work with technical documents and				
application of acquired	theoretical knowledge of students, which ends by submitting a written work in the prescribed format.			

List of courses of this pass:

Code	Name of the course	Completion	Credits
2013054	Mathematics for Mechanics	Z	4

Summary: Tensor calculus. Introduction to functional analysis. Calculus of variations. Orthogonal transformation of coordinate systems. Afinne orthogonal tensors and tensor operations. Tensor as linear operator and bilinear form. Metrics and metric spaces. Convergence. Completness. Linear normed space. Banach space. Linear space with scalar product (unitary space). Hilbert space. Contractive operators and Banach fixed point theorem. Function spaces in examples. Operators and functionals. Linear, continuous and bounded operator/functional. Derivative of a functional in the given direction. Gateaux differential and derivative. Necessary and sufficient conditions for extremes of a functional. Convex set and convex functional. Minimum of convex functional. Extremes of functional of different types. Euler equation. Necessary and sufficient conditions for extrema. Discrete methods for approximation of the minima of an functional. Ritz method.

2041081	English - Master Exam	ZK	1
	English - Master Exam el of Common European Framework of Reference: A2. Aim: Understanding clearly what is spoken about everyday situations which a	I	chool or in
	ne and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement		
2041082	German - Master Exam / FME	ZK	1
	of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a		
	e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement		anguage.
2041083	French - Master Exam / FME	ZK	1
	el of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvemen		
2041084	Spanish - Master Exam / FME	ZK	1
	el of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a	I	er at school
or in his/her free	e 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
	el of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a		
2041086	e time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvemen Czech- Master Exam	ZK	anguage.
2043081	English - Preparatory Course / FME	7 ZR	2
	English - Freparatory Course / Five g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language. European level A1 - A2		
2043082	German - Lower Intermediate Course	Z	2
	vel of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which		
	ner free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improve	ment of profession:	al language.
2043083	French - Preparatory Course / FME Ig 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	2
Aim: Understandir	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	writing in a simple	way about
2043084	Spanish - Preparatory Course / FME	7	2
	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	_
	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.		
2043085	Russian - Preparatory Course / FME	Z	2
Aim: Understandir	ng clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	Writing in a simple	way about
2043086	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	7	2
	Czech - Preparatory Course g clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them.	_	ı
7	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	, may about
			_
2111035	Finite Element Method II.	ZK	3
2111035 2111049	Finite Element Method II. Theory of elasticity	ZK ZK	3 4
2111049 The objective of thi	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid med	ZK hanics courses suc	4 ch as theory
2111049 The objective of thi of plasticity, fractu	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mecure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition	ZK hanics courses suc s of stress and stra	4 ch as theory ain tensors
2111049 The objective of thi of plasticity, fracture used in the linear	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mecure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition r theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor	ZK chanics courses such a strain of stress and strain or, postulates the co	4 ch as theory ain tensors onstitutive
2111049 The objective of thi of plasticity, fractuused in the linear relations for linear	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mecure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition	ZK chanics courses such as of stress and straction, postulates the coon expressed in te	4 ch as theory ain tensors onstitutive orms of the
2111049 The objective of thi of plasticity, fractuused in the linear elations for lineadisplacement vectorsidered andthe	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid medure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition retheory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam	ZK chanics courses such as of stress and strain, postulates the colon expressed in tendrical coordinate coursing the Airy street	ch as theory ain tensors constitutive arms of the systems is ass function
2111049 The objective of thi of plasticity, fractuused in the linear relations for lineadisplacement vectorsidered andthe in the form of a pure state of the considered and the state of th	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid medium mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition reflectively, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam oblynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentration.	ZK chanics courses such as of stress and strain, postulates the colon expressed in tendrical coordinate cusing the Airy streated vertical force as	4 ch as theory ain tensors constitutive arms of the systems is ess function action on a
2111049 The objective of thi of plasticity, fractuused in the linear relations for lineadisplacement vectorsidered andthe in the form of a pure state of the considered and the state of th	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid medure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition reflective theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam olynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate poundary, the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in	ZK chanics courses such as of stress and strain, postulates the colon expressed in tendrical coordinate cusing the Airy streated vertical force as	4 ch as theory ain tensors constitutive arms of the systems is ess function action on a
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2111049 The objective of thi of plasticity, fractured in the linear relations for linear displacement vectors of the form of a public placement of the form of the f	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid medure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition or theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam olynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate oboundary, the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics	ZK thanics courses such as of stress and stress, postulates the country, postulates the country con expressed in tendrical coordinate ausing the Airy streated vertical force an solid mechanics in ZK	4 ch as theory ain tensors constitutive rms of the systems is ess function action on a is presented
2111049 The objective of thi of plasticity, fractured in the linear relations for linear displacement vectors of the form of a public placement of a publi	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mecure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition reference of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam oblynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate occurrency of the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals	ZK hanics courses such soft stress and stress of stress and stress, postulates the coon expressed in tendrical coordinate using the Airy streated vertical force and solid mechanics in the stress of	4 ch as theory pain tensors constitutive rrms of the systems is eas function action on a is presented
2111049 The objective of thi of plasticity, fracture used in the linear relations for linear displacement vectorsidered andthe in the form of a phorizontal straight I 2111083 2113017 2113111	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid median emechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition or theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam oblynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate doundary, the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals Project I.	ZK thanics courses such as of stress and stress, postulates the country, postulates the country con expressed in tendrical coordinate ausing the Airy streated vertical force an solid mechanics in ZK	4 ch as theory ain tensors constitutive rms of the systems is sess function action on a is presented 4 3
2111049 The objective of thi of plasticity, fractured in the linear relations for linear displacement vectors idered and the in the form of a phorizontal straight I 2111083 2113017 2113111 2113112	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mecure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition reference of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam oblynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate occurrency of the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals	ZK thanics courses sur s of stress and stra r, postulates the co on expressed in te ndrical coordinate using the Airy stra atted vertical force a n solid mechanics i	4 ch as theory ain tensors constitutive rms of the systems is sess function action on a is presented 4 3 5
2111049 The objective of thi of plasticity, fracture used in the linear relations for linear displacement vectorsidered andthe in the form of a phorizontal straight I 2111083 2113017 2113111	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid medure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition or theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam olynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate object, the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals Project I. Project II. Project III.	ZK thanics courses sures of stress and stress, postulates the coon expressed in tendrical coordinate using the Airy streated vertical force an solid mechanics in ZK Z Z Z	the characteristic of
2111049 The objective of thi of plasticity, fracti used in the linea relations for linea displacement vec considered andthe in the form of a phorizontal straight I 2111083 2113017 2113111 2113112 2113113	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mediate mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition or theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam oblynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate operation of the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals Project I. Project II.	ZK thanics courses such sof stress and stress of stress and stress, postulates the coon expressed in tendrical coordinate ausing the Airy streated vertical force an solid mechanics in ZK Z Z Z	the characteristic of
2111049 The objective of thi of plasticity, fracti used in the linear relations for linear displacement vectors in the form of a phorizontal straight I 2111083 2113017 2113111 2113112 2113113 2113998 2121016 The study subject at	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid mediate mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition in theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor relastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a Airy stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam obynomial, the stress distribution in a plate with small circular hole submitted to a uniform tension, the stress distribution for a concentrate oundary, the stress distribution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals Project II. Project III. Diploma Project Theoretical Fluid Mechanics aim is to expand the students knowledge gained from the previous subject Thermomechanics Alfa. The attention is focussed namely of	ZK thanics courses such sof stress and stress and stress and stress and stress are stressed in terms on expressed in terms of the Airy stressed vertical force and solid mechanics in So	the characteristics of the systems is east function on a sis presented 4
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2111049 The objective of thi of plasticity, fracti used in the linea relations for linea displacement vec considered andthe in the form of a phorizontal straight I 2111083 2113017 2113111 2113112 2113113 2113998 2121016 The study subject a description method	Theory of elasticity s course is an introduction to the theory and applications of linear elasticity. It also provides the foundation for pursuing other solid medure mechanics, composite structures, theory of plates and shells or continuum mechanics. This course introduces the basic definition r theory of elasticity, determines the principal stress and strain, derives equilibrium equations, compatibility conditions for strain tensor elastic material (generalized Hooke's law). The governing differential equations of elasticity are derived including the Navier's equation and the Beltrami-Michell's equation expressed in terms of the stress tensor. Next, two-dimensional problems in cartesian and cyling a kiry stress function is introduced for the solution of these problems. A few useful application are studied such as bending of a beam obynomial, the stress distibution in a plate with small circular hole submitted to a uniform tension, the stress distibution for a concentrate obundary, the stress distibution in a wedge due to a concentrated force at its apex. Finally, a brief introduction to the energy principles in including the principles of virtual displacements and virtual forces. Continuum Mechanics Basic of Engineering Experimentals Project II. Project III. Diploma Project Theoretical Fluid Mechanics aim is to expand the students knowledge gained from the previous subject Thermomechanics Alfa. The attention is focussed namely of ods of fluid dynamics under low and high Re number values, boundary layer characteristics and its stability and complex flow characted Computational Fluid Mechanics and sthe knowledge gained in the course of Fluid Mechanics about the knowledge of computational fluid dynamics. Emphasis is placed.	ZK thanics courses such sof stress and stress of stress and stress, postulates the colon expressed in tendrical coordinate susing the Airy streated vertical force an solid mechanics in	the state of the systems is east function action on a is presented 4 3 5 10 4 titics, various eastile of the systems is east function on a is presented
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2123112	Project II.	7	5
_	ourse for student is to solve the technical task assigned according to his specialization and focus. The task is focused on more advan	_	1
	ing analysis from commercial programs of FEM and fluid analysis, through Matlab to creation of in-house programs. The project continu		
	acquired in subjects taught in the 2nd semester.		
2123113	Project III.	Z	10
This project is un	derstood as preparation for the diploma thesis. The topic of the project and the way of its realization and the scope of the work is given	by the pre-deter	mined head
	at the student can follow it in his / her thesis. Completion of the project must always be verified by submitting a written report. Typically		
state of the art re	search acquiring theoretical and practical materials by compilation of literature, by visiting optional lectures, taking from potential partr	•	e means fo
	numerical or experimental modeling preparation and realization of experiments preparation of numerical models programming ar		
2123998	Diploma Thesis	Z	10
The diploma the	sis is a final independent work examining the ability of independent logical technical thinking, orientation in the given problem, work w		ments and
04.44.000	application of acquired theoretical knowledge of students, which ends by submitting a written work in the prescribed forma		
2141093	Microelectronics	Z,ZK	3
sasic characterist	cs of logic circuits and programmable logical systems, input and output circuits - voltage and current matching, D/A and A/D converte of communications, electronic and optoelectronic parts for microelectronics, microprocessor system applications.	rs, coding, lines a	na protoco
21.42027		KZ	3
2142027	Electrical Engineering for Applied Mechanics e course is to give the student knowledge about different types of electrical drives for mechatronic systems and their practical use. Me		
	tition. The theory of linear and rotating drivers. Electromagnets supplied by AC and DC power. Static and dynamics parameters of elec		•
• •	ors. Mathematical description of their static and dynamic properties. Principle and function of stepper motor. AC induction motors. Mathematical description of their static and dynamic properties. Principle and function of stepper motor. AC induction motors. Mathematical description of their static and dynamic properties.	•	
	static and dynamic properties. Using MATLAB for drivers behaviour modelling.		
2311019	Synthesis and Optimization of Mechanical Systems	ZK	3
2311074	Vibrations of Mechanical Systems	ZK	4
2311075	Mechanics of Mechanisms	ZK	4
2311076	Simulation of Mechatronic Systems	ZK	3
2311079	Statistical Mechanics	ZK	4
2311084	Advanced Dynamics	ZK	3
2311091	System Identification	ZK	3
2312017	Controlled mechanical systems I.	KZ	3
2313111	Project I.	Z	5
2313112	Project II.	Z	5
2313113	Project III.	Z	10
_0.00	Individual asignment	_	
2313998	Diploma project	Z	10
	individual assignment	_	1
2383062	Budget and Project Economic Assessment	Z	2

The goal of the course is to improve the knowledge gained within the basic bachelor's degree course Management 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 industrial or engineering company or its sub-section (preferably inspired by their practical experience, internships or training program in real company). The first 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 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 and presentation of the task's outputs together with the results of the test decides on granting / denial of credit.

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-07-20, time 14:12.