Study plan

Name of study plan: 19 162 NMAE 2012 bez odoru 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: 60
Elective courses credits: 0
Sum of credits in the plan: 60
Note on the plan:

Name of the block: Compulsory courses in the program
Minimal number of credits of the block: 60
The role of the block: P

Code of the group: 12NM*1P-BOB
Name of the group: 2012 NMAE 1.sem povinné BEZ OBORU
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 9 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
E181107	**Computational Fluid Dynamics**	Z,ZK	4	2P+2C	*	P
E111069	**Design Against Fatigue** *Miroslav Španiel, Jan Papuga* ***Miroslav Španiel*** *Miroslav Španiel (Gar.)*	Z,ZK	2	1P+1C	*	P
E213022	**Foreign Language I.** *Gabriela Achtenová* ***Gabriela Achtenová*** *Gabriela Achtenová (Gar.)*	Z	3	0P+4C	*	P
E211124	**Mechanical and Hydraulical Transmissions** *Gabriela Achtenová* ***Gabriela Achtenová*** *Gabriela Achtenová (Gar.)*	Z,ZK	6	3P+3C	*	P
E211105	**Microelectronics in Vehicles** *Gabriela Achtenová, Jiří Novák, Antonín Platil* ***Antonín Platil*** *Jiří Novák (Gar.)*	Z,ZK	2	1P+1C	*	P
E311066	**Multibody Modelling for Vehicle Systems** *Zdeněk Neusser, Václav Bauma, Petr Beneš, Zbyněk Šika, Michael Valášek, Jan Zavřel* ***Michael Valášek*** *Michael Valášek (Gar.)*	Z,ZK	5	3P+1C	*	P
E341076	**Technology of automotive production** *Pavel Rohan, Jan Tomíček Jan Tomíček (Gar.)*	Z,ZK	4	3P+2C	*	P

Characteristics of the courses of this group of Study Plan: Code=12NM*1P-BOB Name=2012 NMAE 1.sem povinné BEZ OBORU

E181107	Computational Fluid Dynamics	Z,ZK	4
Lectures are oriented upon fundamentals of CFD and first of all to control volume methods (application using Fluent)			
E111069	Design Against Fatigue	Z,ZK	2
The subject provides students with fundamentals of both engineering approach to failure under cyclic loading - fatigue, and finite element analysis. Fatigue and FEA lectures are separated, students has to apply these methods to solve operational life and safety of simple part at homework example.			
E213022	Foreign Language I.	Z	3
The course is aimed at students of all nationalities encountering Czech for the first time. It serves as a practical gateway to the language and forms a solid fondation for futher study. The students will learn the basic Czech quickly to be able to start using the language in everyday situations. The Czech grammer is simplified to the maximum while the objective is the communicative focus.			
E211124	Mechanical and Hydraulical Transmissions	Z,ZK	6
The topic covers the basics of all types of gearboxes used in motor vehicles: mechanical gearboxes, automatics planetary gearset transmissions, CVT/IVT, hydrodynamic and hydrostatic transmissions			
E211105	Microelectronics in Vehicles	Z,ZK	2
The subject is focused on the basics of microelectronics, its use in intelligent devices (sensors and actuators, ECUs) and their applications in cars. The other topics like in-vehicle data communication are included as well.			

E311066	Multibody Modelling for Vehicle Systems	Z,ZK	5
Development Process of Simulation, Matrix Formulation of Kinematics, Different Coordinates for Description of Multibody Systems, Solution of Kinematical Loops, Numerical Methods for Solution of Multibody Kinematics, Kinematical Synthesis of Multibody Systems, Dynamics of Multibody Systems by Lagrange Equations of Mixed Type, Numerical Methods of DAE Solution, Advanced formulation of equations of motion of multibody systems Practice of multibody modelling			
E341076	Technology of automotive production	Z,ZK	4
Materials and stock (blanks) used in manufacture. Welding, stamping, casting and pressing technologies. Machining and finishing methods. Assembly and metrology. Process planing and plant layout planning. Everything focused on automotive production.			

Code of the group: 12NM*2P-BOB
Name of the group: 2012 NMAE 2.sem povinné BEZ OBORU
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 8 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
E211106	**Design of Tools and Plastic Parts** *Gabriela Achtenová, Yann Marco* ***Gabriela Achtenová*** *Yann Marco (Gar.)*	Z,ZK	3	2P+1C	*	P
E212022	**Foreign Language II.** *Gabriela Achtenová* ***Gabriela Achtenová*** *Gabriela Achtenová (Gar.)*	KZ	3	0P+4C	*	P
E212023	**Project and 3D CAD** *Gabriela Achtenová, Václav Jirovský, Vít Doleček* ***Václav Jirovský*** *Václav Jirovský (Gar.)*	KZ	3	0P+3C	*	P
E311068	**Vibration of Vehicles** *Václav Bauma, Zbyněk Šika, Michael Valášek, Jan Zavřel* ***Václav Bauma*** *Václav Bauma (Gar.)*	Z,ZK	5	3P+1C	*	P

Characteristics of the courses of this group of Study Plan: Code=12NM*2P-BOB Name=2012 NMAE 2.sem povinné BEZ OBORU

E211106	Design of Tools and Plastic Parts	Z,ZK	3
The topic gives overview of technological procedure of manufacturing of plastic parts, and basics of designing manufacturing tools followed with guidelines for plastic parts design.			
E212022	Foreign Language II.	KZ	3
E212023	Project and 3D CAD	KZ	3
Basic modeling knowledge in CATIA V5 (solid and surface modeling, assembly creation, drafting, FEM analysis). Design and calculations of road vehicle suspension is the product of individual student's work.			
E311068	Vibration of Vehicles	Z,ZK	5
Vibrations of single-degree-of-freedom mechanical system. Vibrations of multi-degree-of-freedom undamped mechanical system. Approximate methods of discretization of the continuum. Finite elements method. Bending vibrations. Whirling of the shafts. Vibrations of multi-degree-of-freedom damped mechanical system. Torsional vibrations. Flexible machine mounting. Tuning of the systems. Introduction into nonlinear vibrations. Controlled vibration suppresion.			

List of courses of this pass:

Code	Name of the course	Completion	Credits
E111069	Design Against Fatigue	Z,ZK	2
The subject provides students with fundamentals of both engineering approach to failure under cyclic loading - fatigue, and finite element analysis. Fatigue and FEA lectures are separated, students has to apply these methods to solve operational life and safety of simple part at homework example.			
E181107	Computational Fluid Dynamics	Z,ZK	4
Lectures are oriented upon fundamentals of CFD and first of all to control volume methods (application using Fluent)			
E211105	Microelectronics in Vehicles	Z,ZK	2
The subject is focused on the basics of microelectronics, its use in intelligent devices (sensors and actuators, ECUs) and their applications in cars. The other topics like in-vehicle data communication are included as well.			
E211106	Design of Tools and Plastic Parts	Z,ZK	3
The topic gives overview of technological procedure of manufacturing of plastic parts, and basics of designing manufacturing tools followed with guidelines for plastic parts design.			
E211124	Mechanical and Hydraulical Transmissions	Z,ZK	6
The topic covers the basics of all types of gearboxes used in motor vehicles: mechanical gearboxes, automatics planetary gearset transmissions, CVT/IVT, hydrodynamic and hydrostatic transmissions			
E212022	Foreign Language II.	KZ	3
E212023	Project and 3D CAD	KZ	3
Basic modeling knowledge in CATIA V5 (solid and surface modeling, assembly creation, drafting, FEM analysis). Design and calculations of road vehicle suspension is the product of individual student's work.			

E213022	Foreign Language I.	Z	3
The course is aimed at students of all nationalities encountering Czech for the first time. It serves as a practical gateway to the language and forms a solid fondation for futher study. The students will learn the basic Czech quickly to be able to start using the language in everyday situations. The Czech grammer is simplified to the maximum while the objective is the communicative focus.			
E311066	Multibody Modelling for Vehicle Systems	Z,ZK	5
Development Process of Simulation, Matrix Formulation of Kinematics, Different Coordinates for Description of Multibody Systems, Solution of Kinematical Loops, Numerical Methods for Solution of Multibody Kinematics, Kinematical Synthesis of Multibody Systems, Dynamics of Multibody Systems by Lagrange Equations of Mixed Type, Numerical Methods of DAE Solution, Advanced formulation of equations of motion of multibody systems Practice of multibody modelling			
E311068	Vibration of Vehicles	Z,ZK	5
Vibrations of single-degree-of-freedom mechanical system. Vibrations of multi-degree-of-freedom undamped mechanical system. Approximate methods of discretization of the continuum. Finite elements method. Bending vibrations. Whirling of the shafts. Vibrations of multi-degree-of-freedom damped mechanical system. Torsional vibrations. Flexible machine mounting. Tuning of the systems. Introduction into nonlinear vibrations. Controlled vibration suppresion.			
E341076	Technology of automotive production	Z,ZK	4
Materials and stock (blanks) used in manufacture. Welding, stamping, casting and pressing technologies. Machining and finishing methods. Assembly and metrology. Process planing and plant layout planning. Everything focused on automotive production.			

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