Study plan

Name of study plan: 18 159 NIBU 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: 117 Elective courses credits: 3 Sum of credits in the plan: 120 Note on the plan:

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 80 The role of the block: P

Code of the group: 12NI*1P-BOB Name of the group: 2012 NIBU 1.sem povinné BEZ OBORU 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 4 courses Credits in the group: 18 Note on the group: 18

note on the group	ASIVITARETTIETTI SEPSAT					
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
124KPKP	Building Structures Ctislav Fiala Ctislav Fiala (Gar.)	ZK	4	3P	Z	Р
2161108	Transport Phenomena Martin Barták Martin Barták (Gar.)	Z,ZK	4	2P+1C	*	Р
A5M14RPI	Distribution of Electric Energy and Drives Ji í Lettl, Pavel Mindl, Jan Bauer Ji í Lettl Ji í Lettl (Gar.)	Z,ZK	5	2P+1L	Z	Р
124ST1	Thermal Engineering in Construction Jan Tywoniak Jan Tywoniak Jan Tywoniak (Gar.)	ZK	5	2P	Z	Р

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

124KPKP	Building Structures	ZK	4				
Basics of building struct	Basics of building structures. Functional requirements, structural systems, spatial effect of the structural system. Vertical load-bearing structures, floor structures, overhanging structures.						
Envelopes of buildings,	windows, partitions, floors, suspended ceilings. Stairs, roof construction timber roof trusses, roof envelopes. Foundation strue	ctures, structural s	solution of the				
substructure, waterproc	fing of the substructure. Structural systems of single and multi-storey buildings, structural systems of long-span structures.						
2161108	Transport Phenomena	Z,ZK	4				
Basics of transport phere	nomena for the study programme Intelligent Buildings. Momentum, heat and mass transport in built environment.						
A5M14RPI	Distribution of Electric Energy and Drives	Z,ZK	5				
124ST1	Thermal Engineering in Construction	ZK	5				
The subject discusses the basic chapters of building physics - part hygrothermal performance of buildings in an overview manner with the aim of providing basic information to students							
coming from non-constr	uction bachelor's fields and at the same time supplementing knowledge and linking it with contexts for students coming from	civil engineering.					

Code of the group: 12NI*2P-BOB

Name of the group: 2012 NIBU 2.sem povinné BEZ OBORU 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 6 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	
125ESB	Buildings Ecology Systems Stanislav Frolík Stanislav Frolík (Gar.)	KZ	4	2P	L	Р	
125EABI	Energy Audit of Building Hana Kabrhelová	KZ	4	2P	L	Р	
A5M33IZS	Information and Knowledge-Based Systems	Z,ZK	4	2P+1C	L	Р	
2163033	Design IB I. Martin Barták, Ji í Bašta, Petr Zelenský, Jind ich Bohá, Ji í Hemerka, Miroslav Ku era, Miloš Lain, Tomáš Matuška, Roman Vav i ka, Ji í Bašta Ji í Bašta (Gar.)	Z	6	0P+4C	*	Ρ	
2161109	Automatic control in environmental engineering of building Ji í Bašta, Jind ich Bohá Ji í Bašta Ji í Bašta (Gar.)	Z,ZK	4	2P+1C	*	Р	
characteristics of the courses of this group of Study Plan: Code=12NI*2P-BOB Name=2012 NIBU 2.sem povinné BEZ OBORU							

125ESB Buildings Ecology Systems

ΚZ Principles of environmentally friendly water management. Disposal of sewage water and use of rain water. Measurement of water consumption, system design, pumping devices, water saving and special installations.

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4

125EABI Energy Audit of Building	KZ	4						
Advanced course for introduction into energy auditing. Lectures topics: Energy audit and energy performance of buildings, legislation. EPDB - energy performance of buildings, legislation.	Advanced course for introduction into energy auditing. Lectures topics: Energy audit and energy performance of buildings, legislation. EPDB - energy performance directive for buildings.							
Methodology of calculating energy performance of buildings. Energy audit - procedure and parts. Sankey energy flow diagram. Analysis of initial condi	ition, description of	of initial condition						
object survey and survey of project documentation. Determining source efficiency, distribution and emission of heat. Steps towards reduction of energy	y consumption - h	building, heating,						
lighting, ventilating systems, technologies. Application of measures on a specific object. Synergic impact of energy saving measures. Economical eval	luation, evaluation	from the aspect						
of environment protection. Evaluation - emission Individual object survey. Energy audit of industrial objects. Methods of buildings evaluation. Seminar is	s focused on the r	ealistic buildings						
resulting to presenting case study report about energy audit of existing building.								
A5M33IZS Information and Knowledge-Based Systems	Z,ZK	4						
The course provides the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building information	nation systems. Fu	urther on, the						
student learns the basic methods and techniques applicable to knowledge based systems aimed at automated solving of decision-making problems	. The attention is	paid namely to						
data and knowledge representation and its modeling so that the students are able to communicate effectively with IT and knowledge engineering ex	perts. The studen	ts will also learn						
the basics of networking protocols used in intelligent buildings.								
2163033 Design IB I.	Z	6						
Design of heating systems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, including gas cleaning and reduction								
of point								

of noise. Z.ZK 2161109 Automatic control in environmental engineering of building

Application of basic approaches to automatic control of HVAC systems and equipments. Automatic control sequences of air conditioning and sources of heat.

Code of the group: 12NI*3P-BOB

Name of the group: 2012 NIBU 3.sem povinné BEZ OBORU

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 4 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
2162700	Experimental Methods 1 Miroslav Ku era Miroslav Ku era (Gar.)	KZ	4	0P+4L	*	Ρ
2163034	Project IB II. Ji í Bašta Ji í Bašta (Gar.)	Z	6	0P+4C	*	Ρ
2161102	Radiant and Industrial Heating Ji í Bašta, Roman Vav i ka Ji í Bašta Ji í Bašta (Gar.)	Z,ZK	4	2P+1C	*	Р
A5M38SZS	Sensors and Networks Pavel Ripka, Antonín Platil Antonín Platil Pavel Ripka (Gar.)	Z,ZK	4	2P+1L	L	Ρ

Characteristics of the courses of this group of Study Plan: Code=12NI*3P-BOB Name=2012 NIBU 3.sem povinné BEZ OBORU

2162700	Experimental Methods 1	KZ	4	
Introduction study of ex	perimental technique in environmental engineering			
2163034	Project IB II.	Z	6	
Project and experiment	al solution of environmental devices. Optimization investment and operating costs, economic appraisal of ecologic investmen	it.	•	
2161102	Radiant and Industrial Heating	Z,ZK	4	
Student will be informed about the basics of radiant and other industrial heating systems				
A5M38SZS	Sensors and Networks	Z,ZK	4	
Applications of sensors	in buildings	•	•	

Code of the group: 12NI*4P-BOB

Name of the group: 2012 NIBU 4.sem povinné BEZ OBORU

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 4 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
2163086	Thesis Ji í Bašta, Vladimír Šulc Ji í Bašta Ji í Bašta (Gar.)	Z	26	0P+20C	*	Р
A5M16FIP	Corporate finance Old ich Starý, Ji í Vaší ek, Blanka Ku erková Ji í Vaší ek Old ich Starý (Gar.)	КZ	4	3P+1C	L	Р

Characteristics of the courses of this group of Study Plan: Code=12NI*4P-BOB Name=2012 NIBU 4.sem povinné BEZ OBORU

2163086 Thesis

Thesis is final individual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is applied acquired knowledge from previous study periods.

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ΚZ

26

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A5M16FIP Corporate finance

Principles of finance, present value and alternative cost of capital, financial calculus, long-term finance, valuation of bonds and stocks, investment decision and net present value, IRR, comparison time period, annual equivalent value, inflation and return, capital asset pricing model, portfolio, sensitivity analysis and risk, short term finance, cash flow management. Dividend policy.

Name of the block: Compulsory elective courses Minimal number of credits of the block: 37 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 clearly 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. European level A1 - A2.						
2043086 Czech - Preparatory Course	Z	2				
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about the	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 clearly 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.						
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	h 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	ent of professional	language.				
2043085 Russian - 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.						

2043084	Spanish - Preparatory Course / FME	Z	2
Aim: Understanding clea	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.		

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

2041081	English - Master Exam	ZK	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 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 ar	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 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 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 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 ar	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 C	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	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: 12NI*1Q-BOB

Name of the group: 2012 NIBU 1.sem 3povvol BEZ OBORU

Requirement credits in the group: In this group you have to gain 12 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 12 Note on the group:

A5M35MAS je pro jiný stud. program

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
124OSIB	Acoustics and Lighting Jaroslav Vychytil, Lenka Maierová Jaroslav Vychytil Jaroslav Vychytil (Gar.)	KZ	4	2P	Z	PV
A5M15ES1	Electrical Light 1 Petr Žák, Petr Žák Petr Žák (Gar.)	KZ	4	2P+1S	Z	PV
125EIBB	Electroengineering and intelligent buildings Hana Kabrhelová, Bohumír Garlík Bohumír Garlík Bohumír Garlík (Gar.)	KZ	4	2P	Z	PV
124INBB	Integrated Design of Buildings Jan R ži ka, Petr Hájek, Antonín Lupíšek Antonín Lupíšek Petr Hájek (Gar.)	Z,ZK	4	2P+1C	Z	PV

A5M38MEB	Measurements in the Buildings Petr Kašpar Petr Kašpar Petr Kašpar (Gar.)	KZ	4	2P+1L	Z	PV
A5M35MAS	Modeling and simulation	KZ	4	2P+2C	Z	PV
125MEC	Simulation of Building Energy Performance Karel Kabele, Miroslav Urban Karel Kabele Karel Kabele (Gar.)	KZ	4	1P+1C	Z	PV
2152038	Energy Sources and Conversions	KZ	4	3P+1C	*	PV
Characteristics	of the courses of this group of Study Plan: Code=12NI*1Q-BO	B Name=2012 NIE	U 1.sem	3povvol	BEZ OBO	RU
1240SIB	Acoustics and Lighting		-		KZ	4
The course introduc	es students to the basics of building lighting technology and building acoustics and de	epens further knowledge) .	1		
A5M15ES1	Electrical Light 1				KZ	4
125EIBB	Electroengineering and intelligent buildings				KZ	4
The information soci	ety, intelligent systems, new technologies significantly influence various HVAC system	applications. The funda	mental idea	is to save en	ergy, materia	als and ensure
optimal indoor and o	utdoor environmental parameters. The influence of electromagnetic environment, electr	omagnetic compatibility,	application	of intelligent d	evices in buil	dings requires
•	o solve the whole complex of HVAC and intelligent wiring.	0 1 7		Ū		0
124INBB						
The main objective of	Integrated Design of Buildings				Z,ZK	4
	Integrated Design of Buildings of the subject Integrated Building Design is to get an complex overview of the principles	of integrated buildings of	lesign, life c	1	, I	•
of building performa			-	ycle assessm	, I	
	of the subject Integrated Building Design is to get an complex overview of the principles nce, green/sustainable certification systems and understand environmental, social and		-	ycle assessm onment.	, I	•
A5M38MEB	of the subject Integrated Building Design is to get an complex overview of the principles	economic aspects of th	e built envir	ycle assessm onment.	ent of buildir	ngs, evaluation
A5M38MEB The students will lea	of the subject Integrated Building Design is to get an complex overview of the principles nce, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings	economic aspects of th majority of the physical	e built envir quantities a	ycle assessm ronment.	KZ	ngs, evaluation 4 cal signals, an
A5M38MEB The students will lea	of the subject Integrated Building Design is to get an complex overview of the principles ince, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings irrn about principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for stud	economic aspects of th majority of the physical	e built envir quantities a	ycle assessm ronment.	KZ	ngs, evaluation 4 cal signals, an
A5M38MEB The students will lea overview of measure	of the subject Integrated Building Design is to get an complex overview of the principles ince, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings irrn about principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for stud	economic aspects of th majority of the physical	e built envir quantities a	ycle assessm ronment. re converted subjects Elec	KZ	ngs, evaluation 4 cal signals, an
A5M38MEB The students will lea overview of measure Sensors and transdo	of the subject Integrated Building Design is to get an complex overview of the principles ince, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings irrn about principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for studicers on CTU FEE.	economic aspects of th majority of the physical	e built envir quantities a	ycle assessm ronment. re converted subjects Elec	KZ	ngs, evaluation 4 cal signals, an ement and
A5M38MEB The students will lea overview of measure Sensors and transdu A5M35MAS 125MEC	of the subject Integrated Building Design is to get an complex overview of the principles nee, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings Irn about principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for stud acers on CTU FEE. Modeling and simulation	d economic aspects of the majority of the physical lents who have already s	e built envir quantities a studied the s	ycle assessm onment. re converted subjects Elec	KZ to the electri trical measur KZ KZ	4 cal signals, an ement and 4 4
A5M38MEB The students will lea overview of measure Sensors and transdu A5M35MAS 125MEC The course is aimed	of the subject Integrated Building Design is to get an complex overview of the principles nee, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings Im about principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for studicers on CTU FEE. Modeling and simulation Simulation of Building Energy Performance	d economic aspects of the majority of the physical lents who have already s Students will be introdu	e built envir quantities a tudied the s	vcle assessm onment. re converted subjects Elect	KZ to the electri trical measur KZ KZ Is and metho	ngs, evaluation 4 cal signals, an rement and 4 4 odologies for
A5M38MEB The students will lea overview of measure Sensors and transdu A5M35MAS 125MEC The course is aimed solving these problem	of the subject Integrated Building Design is to get an complex overview of the principles nee, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings Im about principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for stud- acers on CTU FEE. Modeling and simulation Simulation of Building Energy Performance at explaining the issues of modelling and simulation of energy behaviour of buildings.	d economic aspects of the majority of the physical lents who have already s Students will be introduced to climate dat	e built envir quantities a tudied the s ced to an ov a, materials	vcle assessm onment. re converted subjects Elect verview of toc s, constructior	KZ to the electri trical measur KZ KZ Is and metho	ergs, evaluation 4 cal signals, an rement and 4 4 odologies for
A5M38MEB The students will lea overview of measure Sensors and transdu A5M35MAS 125MEC The course is aimed solving these problem	of the subject Integrated Building Design is to get an complex overview of the principles ince, green/sustainable certification systems and understand environmental, social and Measurements in the Buildings Imabout principles of measurement of basic physical quantities in the building. As the ement of the electrical quantities is also presented. The subject is not intended for stud- lacers on CTU FEE. Modeling and simulation Simulation of Building Energy Performance at explaining the issues of modelling and simulation of energy behaviour of buildings. ms and learn how to use the simulation software DesignBuilder. In addition, they will be	d economic aspects of the majority of the physical lents who have already s Students will be introduced to climate dat	e built envir quantities a tudied the s ced to an ov a, materials	vcle assessm onment. re converted subjects Elect verview of toc s, constructior Iding energy	KZ to the electri trical measur KZ KZ Is and metho	ngs, evaluation 4 cal signals, ar rement and 4 4 odologies for

Code of the group: 12NI*2Q-BOB

Name of the group: 2012 NIBU 2.sem 1povvol BEZ OBORU

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

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

Credits in the group: 4

Note on the group:

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
A5M02AKA	Acoustic Applications Ond ej Jií ek Ond ej Jií ek Ond ej Jií ek (Gar.)	КZ	4	2P+2L	L	PV
2162035	Alternative Energy Sources Tomáš Matuška Tomáš Matuška (Gar.)	KZ	4	2P+1C	*	PV
A5M34ELE	Electronics Alexandr Laposa, Adam Bou a Alexandr Laposa Alexandr Laposa (Gar.)	KZ	4	3P+1L	L	PV
125OZEB	Renewable Energy Sources Michal Kabrhel Michal Kabrhel (Gar.)	ZK	4	2P	Z	PV
125PBZB	Fire Services Bohumír Garlík, Ilona Koubková, Pavla Hofbauer Pechová, Daniel Adamovský Ilona Koubková Ilona Koubková (Gar.)	КZ	4	2P	L	PV
A5M38SPD	Collection and data transfer Pavel Mlejnek	KZ	4	3P+1L	L	PV
A5M14ZSE	Fundamentals of Power Electrical Engineering	KZ	4	2+1L	L	PV

Characteristics of the courses of this group of Study Plan: Code=12NI*2Q-BOB Name=2012 NIBU 2.sem 1povvol BEZ OBORU

A5M02AKA Acoustic Applications ΚZ 4 Lecture summarize applications in physical acoustics, room and building acoustics, environmental acoustics, noise and vibration control, physiological acoustics, diagnostics, and ultrasound. 2162035 Alternative Energy Sources ΚZ 4 Principles and basics of alternative energy sources use in buildings. Solar energy. Heat pumps. Biomass utilization A5M34ELE Electronics ΚZ 4 125OZEB ΖK 4 **Renewable Energy Sources** The course deals with renewable energy sources and building energy systems. The different types of energy-solar, wind, biomass, geothermal and hydro-are discussed in detail. The characteristics of the energies and the most appropriate methods of use are described. Attention is paid to understanding the correct way to design facilities and systems that use renewable energy sources. 125PBZB Fire Services ΚZ 4 Fire water, hydrant systems, fire pipe, fire station. Fixed fire-fighting water with water mist, foam, and halon. Special fire-fighting equipment. Protecting buildings against fire spread from technological equipment. Electric fire alarm. Fire control equipment. Backup power source. A5M38SPD ΚZ 4 Collection and data transfer

Code of the group: 12NI*3Q-BOB

Name of the group: 2012 NIBU 3.sem 3povvol BEZ OBORU 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 4 courses Credits in the group: 18 Note on the group: A5M38EMC NENÍ SEPSÁN

Note on the gr	oup. Admodeline New					
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
2152060	Refrigeration Technique and Heat Pumps for Intelligent Buildings	KZ	4	3P+1C	*	PV
A5M16EUE	Economics of Energy Use Ji í Beranovský, Július Bernš Ji í Beranovský Július Bernš (Gar.)	KZ	4	3P+1C	Z	PV
A5M34EZS	Electronic security systems Miroslav Husák, Jan Novák, Tomáš Teplý, Václav Prajzler Václav Prajzler Václav Prajzler (Gar.)	KZ	4	3P+1L	Z	PV
A5M13FVS	Photovoltaic Systems Pavel Hrzina, Ladislava erná, Vít zslav Benda Ladislava erná Pavel Hrzina (Gar.)	KZ	4	2P+2L	L	PV
A5M13NZZ	Independent sources Pavel Hrzina, Václav Papež Pavel Hrzina Pavel Hrzina (Gar.)	KZ	4	3P+1L	Z	PV
2162064	Noise and Vibration Control Miroslav Ku era, Richard Nový Miroslav Ku era Miroslav Ku era (Gar.)	KZ	4	2P+1C	*	PV
125SYB	Building Systems Jan Tywoniak, Karel Kabele Karel Kabele (Gar.)	ZK	4	4P	Z	PV
125TECE	Technological Units Hana Kabrhelová, Ilona Koubková Ilona Koubková Ilona Koubková (Gar.)	KZ	4	2P	Z	PV

Characteristics of the courses of this group of Study Plan: Code=12NI*3Q-BOB Name=2012 NIBU 3.sem 3povvol BEZ OBORU

2152060 Refrigeration Technique and Heat Pumps for Intelligent Buildings	KZ	4
A5M16EUE Economics of Energy Use	KZ	4
Organization and energy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characterization	ion of aggregat	e, secondary
energy sources. Energy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and financial ana	alysis.	
A5M34EZS Electronic security systems	KZ	4
A5M13FVS Photovoltaic Systems	KZ	4
Solar energy and its exploitation using photovoltaic systems. Photovoltaic phenomena, solar cells and their characteristics, solar modules (construction,	, technology, pa	arameters).
Photovoltaic systems (including energy conservation). Photovoltaic system applications, optimisation of operating conditions. Basic economical and ecolo	logical aspects,	present trends.
A5M13NZZ Independent sources	KZ	4
Electrochemical sources of the electric power - overview. Electrochemical sources (accumulators), applications. Uninteruptible power sources in IB. Other	er sources of t	he electrical
energy. Perspective sources of electrical enegy, storage of energy.		
2162064 Noise and Vibration Control	KZ	4
Student will be informed about the basic acoustic dimensions, which are important for evaluation of noise.	•	
125SYB Building Systems	ZK	4
Multi-criteria analysis of the requirements for the indoor environment and the function of the systems in different types of buildings and plants and optimiz	ization criteria	for the design of
energy and ecological building systems. Relationships between building technical equipment and the building. Integrated view of conceptual solutions in d	different buildin	g types in terms
of indoor systems and building design. E.g. office buildings, residential buildings, halls, shopping centres, cultural centres, industrial buildings, sports buil	iildings, family ł	nouses, passive
etc. The audience will be introduced to the requirements for the indoor environment, the characteristic elements of energy and environmental building syste	tems in relation	to the structural
design for the building type.		
125TECE Technological Units	KZ	4
Saunas, fireplaces, kitchen technology, elevators, heat pumps, technology, swimming pools, heat source and technological systems.	•	

List of courses of this pass:

Code	Name of the course	Completion	Credits				
124INBB	Integrated Design of Buildings	Z,ZK	4				
The main objective	of the subject Integrated Building Design is to get an complex overview of the principles of integrated buildings design, life cycle asses	ssment of buildings	s, evaluation				
of	building performance, green/sustainable certification systems and understand environmental, social and economic aspects of the buil	t environment.					
124KPKP	Building Structures	ZK	4				
Basics of building s	Basics of building structures. Functional requirements, structural systems, spatial effect of the structural system. Vertical load-bearing structures, floor structures, overhanging structure						
Envelopes of buildings, windows, partitions, floors, suspended ceilings. Stairs, roof construction timber roof trusses, roof envelopes. Foundation structures, structural solution of the							
s	substructure, waterproofing of the substructure. Structural systems of single and multi-storey buildings, structural systems of long-span structures.						

124OSIB	Acoustics and Lighting The course introduces students to the basics of building lighting technology and building acoustics and deepens further knowle	KZ	4
124ST1	Thermal Engineering in Construction	ZK	5
-	es the basic chapters of building physics - part hygrothermal performance of buildings in an overview manner with the aim of providing n non-construction bachelor's fields and at the same time supplementing knowledge and linking it with contexts for students coming f		
125EABI	Energy Audit of Building	KZ	4
، dvanced course fo	r introduction into energy auditing. Lectures topics: Energy audit and energy performance of buildings, legislation. EPDB - energy perfo	rmance directive	for buildings
lethodology of calc	culating energy performance of buildings. Energy audit - procedure and parts. Sankey energy flow diagram. Analysis of initial condition	, description of ini	tial condition
	urvey of project documentation. Determining source efficiency, distribution and emission of heat. Steps towards reduction of energy co		
	systems, technologies. Application of measures on a specific object. Synergic impact of energy saving measures. Economical evaluatio ection. Evaluation - emission Individual object survey. Energy audit of industrial objects.Methods of buildings evaluation. Seminar is foc resulting to presenting case study report about energy audit of existing building.		-
125EIBB	Electroengineering and intelligent buildings	KZ	4
he information soc	siety, intelligent systems, new technologies significantly influence various HVAC system applications. The fundamental idea is to save	energy, materials	and ensure
ptimal indoor and c	butdoor environmental parameters. The influence of electromagnetic environment, electromagnetic compatibility, application of intelliger a system approach to solve the whole complex of HVAC and intelligent wiring.	nt devices in buildi	ngs requires
125ESB	Buildings Ecology Systems	KZ	4
rinciples of enviror	nmentally friendly water management. Disposal of sewage water and use of rain water. Measurement of water consumption, system de	esign, pumping de	vices, wate
	saving and special installations.		1
125MEC	Simulation of Building Energy Performance	KZ	4
	ed at explaining the issues of modelling and simulation of energy behaviour of buildings. Students will be introduced to an overview of		
	ems and learn how to use the simulation software DesignBuilder. In addition, they will be introduced to climate data, materials, construct naviour. The aim of the course is to provide students with basic knowledge and practical experience in modelling and simulating build		
1250ZEB	Renewable Energy Sources	ZK	4
	renewable energy sources and building energy systems. The different types of energy-solar, wind, biomass, geothermal and hydr		-
	the energies and the most appropriate methods of use are described. Attention is paid to understanding the correct way to design fac		
	renewable energy sources.		
125PBZB	Fire Services	KZ	4
Fire water, hydrant	systems, fire pipe, fire station. Fixed fire-fighting water with water mist, foam, and halon. Special fire-fighting equipment. Protecting build	dings against fire	spread from
(technological equipment. Electric fire alarm. Fire control equipment. Backup power source.		
125SYB	Building Systems	ZK	4
	is of the requirements for the indoor environment and the function of the systems in different types of buildings and plants and optimiz		-
energy and ecologic	cal building systems. Relationships between building technical equipment and the building. Integrated view of conceptual solutions in d	inerent building ty	pes in terms
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2043086	Czech - Preparatory Course	7	2
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	familiar topics. Reading and comprehension of simple texts. Improvement of professional language.	.	
2152038	Energy Sources and Conversions	KZ	4
2152060	Refrigeration Technique and Heat Pumps for Intelligent Buildings	KZ	4
2161102	Radiant and Industrial Heating Student will be informed about the basics of radiant and other industrial heating systems	Z,ZK	4
2161108	Transport Phenomena	Z,ZK	4
1	Basics of transport phenomena for the study programme Intelligent Buildings. Momentum, heat and mass transport in built enviro	nment.	-
2161109 Applicat	Automatic control in environmental engineering of building ion of basic approaches to automatic control of HVAC systems and equipments. Automatic control sequences of air conditioning and	Z,ZK d sources of heat.	4
2162035	Alternative Energy Sources Principles and basics of alternative energy sources use in buildings. Solar energy. Heat pumps. Biomass utilization.	KZ	4
2162064	Noise and Vibration Control Student will be informed about the basic acoustic dimensions, which are important for evaluation of noise.	KZ	4
2162700	Experimental Methods 1 Introduction study of experimental technique in environmental engineering	KZ	4
2163033	Design IB I.	Z	6
Design of heating sy	stems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, includi of noise.	ing gas cleaning a	nd reductior
2163034 Proj	Project IB II. ect and experimental solution of environmental devices. Optimization investment and operating costs, economic appraisal of ecolog	Z ic investment.	6
2163086 Thesis is final indi	Thesis vidual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is applie previous study periods.	Z d acquired knowle	26 edge from
A5M02AKA	Acoustic Applications	KZ	4
	e applications in physical acoustics, room and building acoustics, environmental acoustics, noise and vibration control, physiological ultrasound.		ostics, and
A5M13FVS	Photovoltaic Systems	KZ	4
	its exploitation using photovoltaic systems. Photovoltaic phenomena, solar cells and their characteristics, solar modules (constructio		· ·
	s (including energy conservation). Photovoltaic system applications, optimisation of operating conditions. Basic economical and ecolo	ogical aspects, pre	esent trends
A5M13NZZ	Independent sources	KZ	4
Electrochemical so	purces of the electric power - overview. Electrochemical sources (accumulators), applications. Uninteruptible power sources in IB. Ot	her sources of the	e electrical
	energy. Perspective sources of electrical enegy, storage of energy.		
A5M14RPI	Distribution of Electric Energy and Drives	Z,ZK	5
A5M14ZSE	Fundamentals of Power Electrical Engineering	KZ	4
A5M15ES1	Electrical Light 1	KZ	4
A5M16EUE	Economics of Energy Use nergy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characterizat	KZ	4
			secondary
•	sources. Energy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and		
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