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:

ASM14RPI není sepsán

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 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 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 structures, structural solution of the						
substructure, waterprod	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 phe	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-construction 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	*	Р
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	KZ	4
Principles of enviro	nmentally friendly water management. Disposal of sewage water and use of rain water. Measurement of water consumption, syste	m design, pumpin	g devices, water
saving and special	installations.		
125EABI	Energy Audit of Building	KZ	4
Advanced course fo	r introduction into energy auditing. Lectures topics: Energy audit and energy performance of buildings, legislation. EPDB - energy p	erformance direct	tive for buildings
Methodology of cald	culating energy performance of buildings. Energy audit - procedure and parts. Sankey energy flow diagram. Analysis of initial condi	tion, description o	f initial condition
object survey and s	urvey of project documentation. Determining source efficiency, distribution and emission of heat. Steps towards reduction of energ	y consumption - b	uilding, heating
lighting, ventilating	systems, technologies. Application of measures on a specific object. Synergic impact of energy saving measures. Economical eval	uation, evaluation	from the aspec
of environment prot	ection. Evaluation - emission Individual object survey. Energy audit of industrial objects. Methods of buildings evaluation. Seminar is	s focused on the re	ealistic buildings
resulting to present	ing case study report about energy audit of existing building.		
A5M33IZS	Information and Knowledge-Based Systems	Z,ZK	4
	Information and Knowledge-Based Systems s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building inform	· ' I	-
The course provide	j ,	ation systems. Fu	rther on, the
The course provide student learns the b	s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building inform	ation systems. Fu . The attention is p	orther on, the baid namely to
The course provide student learns the bud and knowledge	s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building information because the student with a necessary overview of information information and techniques applicable to knowledge based systems aimed at automated solving of decision-making problems.	ation systems. Fu . The attention is p	orther on, the baid namely to
The course provide student learns the bud and knowledge	s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building inform pasic methods and techniques applicable to knowledge based systems aimed at automated solving of decision-making problems be representation and its modeling so that the students are able to communicate effectively with IT and knowledge engineering ex	ation systems. Fu . The attention is p	orther on, the baid namely to
The course provide student learns the batta and knowledge the basics of netwo	s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building information making problems are methods and techniques applicable to knowledge based systems aimed at automated solving of decision-making problems are representation and its modeling so that the students are able to communicate effectively with IT and knowledge engineering exprixing protocols used in intelligent buildings.	ation systems. Fu The attention is perts. The student	orther on, the paid namely to as will also learn
The course provide student learns the batta and knowledge the basics of netwo	s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building information assic methods and techniques applicable to knowledge based systems aimed at automated solving of decision-making problems are representation and its modeling so that the students are able to communicate effectively with IT and knowledge engineering exprixing protocols used in intelligent buildings. Design IB I.	ation systems. Fu The attention is perts. The student	orther on, the paid namely to as will also learn
The course provide student learns the batta and knowledge the basics of network 2163033 Design of heating systems and the state of the	s the student with a necessary overview of information technologies with attention paid to reqiremnts of intelligent building information assic methods and techniques applicable to knowledge based systems aimed at automated solving of decision-making problems are representation and its modeling so that the students are able to communicate effectively with IT and knowledge engineering exprixing protocols used in intelligent buildings. Design IB I.	ation systems. Fu The attention is perts. The student	orther on, the paid namely to as will also learn

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

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	Project and experimental solution of environmental devices. Optimization investment and operating costs, economic appraisal of ecologic investment.						
2161102	Radiant and Industrial Heating	Z,ZK	4				
Student will be informed	Student will be informed about the basics of radiant and other industrial heating systems						
A5M38SZS	Sensors and Networks	Z,ZK	4				
Applications of sensors	pplications 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:

14010 011 1110 8	gιουρ.					
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)	KZ	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

2163086ThesisZ26Thesis 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.A5M16FIPCorporate financeKZ4

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:

11010 011 1110	<u> </u>			1	, , , , , , , , , , , , , , , , , , , ,	
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) 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

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. Rea	ling 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. Rea	ling 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. Rea	ling and comprehension of simple texts. Improvement of professional language.		
2043082	German - Lower Intermediate Course	Z	2
Mapped to the leve	of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations whic	h a student meets	either at scho
or in his/her free tin	e and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	nt 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 the	em. Writing in a sir	nple way about
familiar tonics Rea	ling and comprehension of simple texts. Improvement of professional language.		

2043084 Spanish - Preparatory Course / FME

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.

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**3QJZ Name=2012 N 3.sem povinná s	jazyková zko	ouška
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	h a student meets	at school or in
his/her free time an	d speaking 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 Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which	h a student meets	s either at schoo
or in his/her free time	e and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	ent 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	h a student meets	s either at school
or in his/her free time	e and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	ent 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	h a student meets	s either at schoo
or in his/her free time	e and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improveme	ent 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	h a student meets	s either at schoo
or in his/her free tim	e and speaking about them. Writing in a simple way about familiar topics, reading and comprehesion of simple texts. Improveme	ent 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 (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-BOB Name=2012 NIBU 1.sem 3povvol BEZ OBORU

Acoustics and Lighting	KZ	4
students to the basics of building lighting technology and building acoustics and deepens further knowledge.		
Electrical Light 1	KZ	4
Electroengineering and intelligent buildings	KZ	4
	students to the basics of building lighting technology and building acoustics and deepens further knowledge. Electrical Light 1	students to the basics of building lighting technology and building acoustics and deepens further knowledge. KZ

The information society, intelligent systems, new technologies significantly influence various HVAC system applications. The fundamental idea is to save energy, materials and ensure optimal indoor and outdoor environmental parameters. The influence of electromagnetic environment, electromagnetic compatibility, application of intelligent devices in buildings requires a system approach to solve the whole complex of HVAC and intelligent wiring.

124INBB Integrated Design of Buildings Z,ZK

The main objective of the subject Integrated Building Design is to get an complex overview of the principles of integrated buildings design, life cycle assessment of buildings, evaluation of building performance, green/sustainable certification systems and understand environmental, social and economic aspects of the built environment.

Measurements in the Buildings

The students will learn about principles of measurement of basic physical quantities in the building. As the majority of the physical quantities are converted to the electrical signals, an overview of measurement of the electrical quantities is also presented. The subject is not intended for students who have already studied the subjects Electrical measurement and Sensors and transducers on CTU FEE.

A5M35MAS	Modeling and simulation	KZ	4
125MEC	Simulation of Building Energy Performance	KZ	4
The course is aimed at	explaining the issues of modelling and simulation of energy behaviour of buildings. Students will be introduced to an overvieur	w of tools and me	thodologies for

solving these problems and learn how to use the simulation software DesignBuilder. In addition, they will be introduced to climate data, materials, construction and other factors affecting building behaviour. The aim of the course is to provide students with basic knowledge and practical experience in modelling and simulating building energy behaviour.

2152038 **Energy Sources and Conversions**

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:

voic on the g	roup.					
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 Ji í ek Ond ej Ji í ek (Gar.)	KZ	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 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.)	KZ	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	KZ	4
Lecture summarize	applications in physical acoustics, room and building acoustics, environmental acoustics, noise and vibration control	ol, physiological acoustics, diag	nostics, and
ultrasound.			
2162035	Alternative Energy Sources	KZ	4
Principles and basic	cs of alternative energy sources use in buildings. Solar energy. Heat pumps. Biomass utilization.		'
A5M34ELE	Electronics	KZ	4
125OZEB	Renewable Energy Sources	ZK	4
The course deals w	ith renewable energy sources and building energy systems. The different types of energy-solar, wind, biomass, geo	thermal and hydro-are discuss	ed in detail. The
characteristics of the	e energies and the most appropriate methods of use are described. Attention is paid to understanding the correct w	vay to design facilities and syste	ems that use
renewable energy s	ources.		
125PBZB	Fire Services	KZ	4
Fire water, hydrant s	systems,fire pipe,fire station. Fixed fire-fighting water with water mist, foam, and halon. Special fire-fighting equipmer	nt.Protecting buildings against f	ire spread from
technological equipr	ment.Electric fire alarm. Fire control equipment. Backup power source.		
A5M38SPD	Collection and data transfer	K7	4

A5M14ZSE Fundamentals of Power Electrical Engineering

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

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 Bemš Ji í Beranovský Július Bemš (Gar.)	KZ	4	3P+1C	Z	PV
A5M34EZS	Electronic security systems Miroslav Husák, Jan Novák, Tomáš Teplý, 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 (Gar.)	KZ	4	2P	Z	PV

Characteristics o	f the courses of this group of Study Plan: Code=12NI*3Q-BOB Name=2012 NIBU 3.sem 3po	vvol BEZ OB	ORU
2152060	Refrigeration Technique and Heat Pumps for Intelligent Buildings	KZ	4
A5M16EUE	Economics of Energy Use	KZ	4
Organization and ener	gy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characteri	zation of aggrega	te, secondary
energy sources. Energ	y audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and financial	analysis.	
A5M34EZS	Electronic security systems	KZ	4
A5M13FVS	Photovoltaic Systems	KZ	4
Solar energy and its ex	ploitation using photovoltaic systems. Photovoltaic phenomena, solar cells and their characteristics, solar modules (construct	ion, technology, p	arameters).
Photovoltaic systems (including energy conservation). Photovoltaic system applications, optimisation of operating conditions. Basic economical and e	ecological aspects	s, present trends.
A5M13NZZ	Independent sources	KZ	4
Electrochemical source	s of the electric power - overview. Electrochemical sources (accumulators), applications. Uninteruptible power sources in IB.	Other sources of	the electrical
energy. Perspective so	urces of electrical enegy, storage of energy.		
2162064	Noise and Vibration Control	KZ	4
Student will be informed	d about the basic acoustic dimensions, which are important for evaluation of noise.		'
125SYB	Building Systems	ZK	4
Multi-criteria analysis o	of the requirements for the indoor environment and the function of the systems in different types of buildings and plants and op	timization criteria	for the design of
energy and ecological	building systems. Relationships between building technical equipment and the building. Integrated view of conceptual solutions	in different buildir	ng types in terms
of indoor systems and	building design. E.g. office buildings, residential buildings, halls, shopping centres, cultural centres, industrial buildings, sports	buildings, family	houses, passive
etc. The audience will b	e introduced to the requirements for the indoor environment, the characteristic elements of energy and environmental building s	systems in relation	າ to the structural
design for the building	type.		
125TECE	Technological Units	KZ	4

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 asset	ssment of buildings	s, evaluation
of b	ouilding 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	tructures. Functional requirements, structural systems, spatial effect of the structural system. Vertical load-bearing structures, floor struc	ctures, overhanging	g structures.
Envelopes of build	fings, windows, partitions, floors, suspended ceilings. Stairs, roof construction timber roof trusses, roof envelopes. Foundation structu	ires, structural solu	ıtion of the
s	ubstructure, waterproofing of the substructure. Structural systems of single and multi-storey buildings, structural systems of long-spa	n structures.	

124OSIB	Acoustics and Lighting	KZ	4
	The course introduces students to the basics of building lighting technology and building acoustics and deepens further knowle	edge.	ļ
124ST1	Thermal Engineering in Construction	ZK	5
•	s the basic chapters of building physics - part hygrothermal performance of buildings in an overview manner with the aim of providing	•	
	non-construction bachelor's fields and at the same time supplementing knowledge and linking it with contexts for students coming		
125EABI	Energy Audit of Building	KZ	4
	ntroduction into energy auditing. Lectures topics: Energy audit and energy performance of buildings, legislation. EPDB - energy performance of buildings, legislation. EPDB - energy performance of buildings, legislation.		_
	lating energy performance of buildings. Energy audit - procedure and parts. Sankey energy flow diagram. Analysis of initial condition vey of project documentation. Determining source efficiency, distribution and emission of heat. Steps towards reduction of energy co	-	
	vey of project documentation. Determining source efficiency, distribution and emission of neat. Steps towards reduction of energy constructions are steps towards reduction of energy constructions are steps towards reduction of energy constructions. Application of measures on a specific object. Synergic impact of energy saving measures. Economical evaluati	•	
	tion. Evaluation - emission Individual object survey. Energy audit of industrial objects. Methods of buildings evaluation. Seminar is for		
·	resulting to presenting case study report about energy audit of existing building.		Ü
125EIBB	Electroengineering and intelligent buildings	KZ	4
	ty, intelligent systems, new technologies significantly influence various HVAC system applications. The fundamental idea is to save		
optimal indoor and out	tdoor environmental parameters. The influence of electromagnetic environment, electromagnetic compatibility, application of intelligen	nt devices in build	ings requires
	a system approach to solve the whole complex of HVAC and intelligent wiring.		
125ESB	Buildings Ecology Systems	KZ	4
Principles of environm	nentally friendly water management. Disposal of sewage water and use of rain water. Measurement of water consumption, system decreased in the consumption of the cons	esign, pumping d	evices, wate
	saving and special installations.		
125MEC	Simulation of Building Energy Performance	KZ	4
	at explaining the issues of modelling and simulation of energy behaviour of buildings. Students will be introduced to an overview o		-
	is and learn how to use the simulation software DesignBuilder. In addition, they will be introduced to climate data, materials, construc viour. The aim of the course is to provide students with basic knowledge and practical experience in modelling and simulating build		•
125OZEB		ZK	4
	Renewable Energy Sources h renewable energy sources and building energy systems. The different types of energy-solar, wind, biomass, geothermal and hydr		-
	e energies and the most appropriate methods of use are described. Attention is paid to understanding the correct way to design far		
	renewable energy sources.		
125PBZB	Fire Services	KZ	4
-	stems,fire pipe,fire station.Fixed fire-fighting water with water mist, foam, and halon. Special fire-fighting equipment.Protecting build		spread from
	technological equipment. Electric fire alarm. Fire control equipment. Backup power source.		
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 optimize	zation criteria for	the design o
energy and ecological	l building systems. Relationships between building technical equipment and the building. Integrated view of conceptual solutions in d	ifforont building to	mac in tarm
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of indoor systems and	d building design. E.g. office buildings, residential buildings, halls, shopping centres, cultural centres, industrial buildings, sports bui be introduced to the requirements for the indoor environment, the characteristic elements of energy and environmental building systems.	ldings, family hou	ises, passive
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2152038	Energy Sources and Conversions	KZ	4
2152060	Refrigeration Technique and Heat Pumps for Intelligent Buildings	KZ	4
2161102	Radiant and Industrial Heating	Z,ZK	4
2101102	Student will be informed about the basics of radiant and other industrial heating systems	2,213	1 -
2161108	Transport Phenomena	Z,ZK	4
	Basics of transport phenomena for the study programme Intelligent Buildings. Momentum, heat and mass transport in built enviro		,
2161109	Automatic control in environmental engineering of building	Z,ZK	4
	tion of basic approaches to automatic control of HVAC systems and equipments. Automatic control sequences of air conditioning an		:-
2162035	Alternative Energy Sources	KZ	4
·	Principles and basics of alternative energy sources use in buildings. Solar energy. Heat pumps. Biomass utilization.	'	'
2162064	Noise and Vibration Control	KZ	4
	Student will be informed about the basic acoustic dimensions, which are important for evaluation of noise.		_
2162700	Experimental Methods 1	KZ	4
	Introduction study of experimental technique in environmental engineering		_
2163033	Design IB I.	Z	6
esign of heating s	stems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, included the conditioning systems are conditioned by the conditioning	ling gas cleaning a	and reducti
	of noise.		
2163034	Project IB II.	Z	6
	ject and experimental solution of environmental devices. Optimization investment and operating costs, economic appraisal of ecolog		
2163086	Thesis	Z	26
Thesis is final inc	lividual work. This work checks ability of logical independent technical thinking and treatment with technical materials. There is applied previous study periods.	ed acquired knowl	ledge from
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Lecture Summani	e applications in physical acoustics, room and building acoustics, environmental acoustics, noise and vibration control, physiological ultrasound.	ii acousiics, diagri	usiics, and
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Applications of sensors in buildings