Study plan

Name of study plan: Electrical Engineering, Power Engineering and Management - Technological Systems

Faculty/Institute/Others: Faculty of Electrical Engineering

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Electrical Engineering, Power Engineering and Management

Type of study: Follow-up master combined

Required credits: 116
Elective courses credits: 4
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: 61

The role of the block: P

Code of the group: 2018_MEEMDIP-K Name of the group: Diploma Thesis

Requirement credits in the group: In this group you have to gain 25 credits Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 25 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
BDIP25	Diploma Thesis	Z	25	22s	L	Р

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMDIP-K Name=Diploma Thesis

BDIP25 Diploma Thesis Z 25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.

Code of the group: 2018_MEEMH-K Name of the group: Humanities subjects

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
BD0M16FIL	Philosophy 2	Z,ZK	5	14KP+6KS	L	Р
BD0M16HVT	History of science and technology 2	Z,ZK	5	14KP+6KS	L	Р
BD0M16PSM	Psychology Milana ížek Hrubá, Jaroslav Knápek Ji í Vaší ek Ji í Vaší ek (Gar.)	Z,ZK	5	14KP+6KS	Z,L	Р
BD0M16TEO	Theology	Z,ZK	5	14KP+6KS	L	Р

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMH-K Name=Humanities subjects

BD0M16FIL	Philosophy 2	Z,ZK	5			
BD0M16HVT	History of science and technology 2	Z,ZK	5			
This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the history and						

This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the history and traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technical engineers

BD0M16PSM	Psychology	Z,ZK	5
BD0M16TEO	Theology	Z,ZK	5

This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic disciplines are gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christianity - religion from which graws our civilization up.

Code of the group: 2018_MEEMP-K

Name of the group: Compulsory subjects of the programme

Requirement credits in the group: In this group you have to gain 31 credits

Requirement courses in the group: In this group you have to complete 6 courses

Credits in the group: 31 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BD1M16EKE1	Economy of Power Industry Ji í Vaší ek, Old ich Starý, Tomáš Králík Tomáš Králík Old ich Starý (Gar.)	Z,ZK	5	14KP+6KC	L	Р
BD1M15IAP	Engineering Applications Jan Kyncl	Z,ZK	5	14KP+6KC	Z	Р
BD1M13JAS1	Quality and Reliability Pavel Mach, Martin Molhanec Pavel Mach Pavel Mach (Gar.)	Z,ZK	6	14KP+6KC	Z	Р
BD1MPROJ	Individual project Ji í Vaší ek, Miroslav Vítek, Josef ernohous, Zden k Müller, Stanislav Bou ek Old ich Starý Old ich Starý (Gar.)	Z	5	0p+4s	Z	Р
BD1M15PPE1	Elements and Operation of Electrical Power Systems Stanislav Bou ek, Jan Hlavá ek	Z,ZK	5	14KP+6KS	Z	Р
BD1M14SSE	Machinery and Structures of Power Plants Petr Ko árník Petr Ko árník (Gar.)	Z,ZK	5	14KP+6KC	Z	Р

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMP-K Name=Compulsory subjects of the programme

BD1M16EKE1	Economy of Power Industry	Z,ZK	5
Fundamentals of finance	ing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and ga	s production and	distribution.
Examples of economic	evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externalities. Energy p	olicy and energy la	aw in CR.
Liberalization and power	r market development.		

BD1M15IAP	Engineering Applications	Z,ZK	5
BD1M13JAS1	Quality and Reliability	Z,ZK	6

Terminology and definitions from the area of quality and reliability and their control, philosophy of quality, systems of quality control in the world. Reliability as a part of quality. Basic definitions from the area of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types of warm and cold standbys. Reliability of components and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical methods and tools joined with quality control, managerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Statistical inspection.

BD1MPROJ	Individual project	Z	5
Independent work in the	form of a project. A student will choose a topic from a list of topics specified by branch department. The project will be defer	ded within the fra	mework of a
subject.			
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Subject.						
BD1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5			
BD1M14SSE	Machinery and Structures of Power Plants	Z,ZK	5			
The aim of the course is to acquaint students with forms of energy transformation in power plants, describing the function of power facilities, their structure, properties and characteristics.						

Name of the block: Povinné p edm ty zam ení Minimal number of credits of the block: 45

The role of the block: PZ

Code of the group: 2018_MEEMPPS3-K

Name of the group: Compulsory subjects of the specialization

Requirement credits in the group: In this group you have to gain 15 credits

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

Credits in the group: 15

Note on the group:

Specializace Technologické systémy

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
BD1M13AEZ	Application of Electrochemical Sources Václav Papež	Z,ZK	5	14KP+6KL	Z	PZ
BD1M13MAD	Control methods and testing in electrotechnology	Z,ZK	5	14KP+6KL	L	PZ

BD1M13SVS	Simulation of Production Sytems Pavel Mach	Z,ZK	5	14KP+6KC	Z	PZ
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Characteristics of the courses of this group of Study Plan: Code=2018_MEEMPPS3-K Name=Compulsory subjects of the specialization

BD1M13AEZ Application of Electrochemical Sources

7 7K

5

After a brief introduction to chemical reactions commonly present in electrochemical sources, the technologies and manufacturing of commonplace accumulator batteries and primary cells are discussed in detail. In the course, there is presented the current state of the field of batteries for different types of applications - electromobility, stationary backup systems and energetics. Emphasis is also placed on the trends in simultaneously using of battery storage for balancing network characteristics, especially in combination with the RES.

BD1M13MAD | Control methods and testing in electrotechnology

Z.ZK

The course follows the needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including measurement of important parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtained data.

BD1M13SVS Simulation of Production Sytems

7 7K

The course is focused at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterized. Models are built up using an analytical way on the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative variables are presented. Computer aided generation of mathematical models and simulation of dynamic behavior of processes and systems are described. Basic methods of component models compilation, assembly of a complete model are presented. The application on computer modeling and simulation of electrical, thermal and mechanical systems in power electrical engineering completes the lectures.

Code of the group: 2018_MEEMPS-K

Name of the group: Compulsory subjects of the specialization

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 6 courses

Credits in the group: 30 Note on the group:

Note on the give	-					
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
BD1M13ASS	Solar Systems Applications Vít zslav Benda, Ladislava erná, Jakub Holovský, Pavel Hrzina Vít zslav Benda Vít zslav Benda (Gar.)	Z,ZK	5	14KP+6KL	Z	PZ
BD1M13EKP	Ecology and materials Ivan Kudlá ek Ivan Kudlá ek (Gar.)	Z,ZK	5	14KP+6KC	Z	PZ
BD1M14ESP	Electric Machinery and Apparatus Pavel Mindl, Vít Hlinovský Pavel Mindl	Z,ZK	5	14KP+6KL	Z	PZ
BD1M15PRE1	Transmission and Distribution of Electricity Stanislav Bou ek	Z,ZK	5	14KP+6KS	Z	PZ
BD1M15TVN	High Voltage Engineering Jan Hlavá ek	Z,ZK	5	14KP+6KL	L	PZ
BD1M14TVM	Theory and Application of Power Converters Jan Bauer Jan Bauer (Gar.)	Z,ZK	5	14KP+6KL	. L	PZ

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMPS-K Name=Compulsory subjects of the specialization

BD1M13ASS | Solar Systems Applications | Z,ZK | 5
The aim of the course is to deepen the knowledge of the properties of semiconductor materials and structures that are important for a deeper understanding of the semiconductor

BD1M13EKP Ecology and materials

components technology

Z,ZK

5

Electrical Technology from the perspective of ecology. Environmental assessment of the various types of surface protection. Environmental aspects of protective systems used in electronics. Environmental impacts of electrical production. Ekodesign proposal of the electrical product. Principles of the proposal product for a difficult operating environment. Disposal of electrical waste.

BD1M14ESP Electric Machinery and Apparatus

Z,ZK

5

The course is focused on contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern semiconductor devices and their protection circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of commutation. The transformer efficiency, voltage drop. Transients - switch to the network, a short circuit. Mathematical model of synchronous and asynchronous machines. A rotating magnetic field. Induction machine, starting and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, stability, overload capacity.

BD1M15PRE1	Transmission and Distribution of Electricity	Z,ZK	5
BD1M15TVN	High Voltage Engineering	Z,ZK	5
BD1M14TVM	Theory and Application of Power Converters	Z,ZK	5

The course focuses on typical applications of power semiconductor converters on their sizing, switching and protection of power semiconductor converters. It also summarizes the basics of modulation and control strategies of power semiconductor converters and modern trends in their application in electric drives and other applications.

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 10

The role of the block: PV

Code of the group: 2018_MEEMPV1-K

Name of the group: Compulsory elective subjects of the specialization

Requirement credits in the group: In this group you have to gain at least 10 credits (at most 20)

Requirement courses in the group: In this group you have to complete at least 2 courses (at most 4)

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
BD1M16EUE1	Economy of Energy Use Ji í Beranovský Ji í Beranovský (Gar.)	Z,ZK	5	14KP+6KS	L	PV
BD1M15ELS	Electrical Light Marek Bálský, Petr Žák	Z,ZK	5	14KP+6KL	L	PV
BD1M14MDS1	Modeling of Dynamical Systems	Z,ZK	5	14KP+6KC	L L	PV
BD1M13VSE	Power components in electrical engineering Václav Papež Václav Papež Václav Papež (Gar.)	Z,ZK	5	14KP+6KL	. L	PV

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMPV1-K Name=Compulsory elective subjects of the specialization

specialization						
BD1M16EUE1	Economy of Energy Use	Z,ZK	5			
Organization and energ	Organization and energy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characterization of aggregate, secondary					
energy sources. Energy	audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and financial	analysis.				
BD1M15ELS	Electrical Light	Z,ZK	5			
BD1M14MDS1	Modeling of Dynamical Systems	Z,ZK	5			
The course deals with o	The course deals with combining knowledge of the dynamics of rigid bodies, fluid mechanics, aerodynamics, gas dynamics and thermodynamics in the compilation of nonlinear models					
of dynamic systems. Se	of dynamic systems. Seminars are focused on assembling of numeric models in Matlab / Simulink.					
BD1M13VSE	Power components in electrical engineering	Z,ZK	5			
Power semiconductor device (diodes, BJTs, thyristors, MOSFETs and IGBTs) and integraed structures (modules). Structures, function, characteristics and parameters, Passive						
components of powet e	components of powet electronic. Connection of devices in parallel and in series.					

Name of the block: Elective courses Minimal number of credits of the block: 0

The role of the block: V

Code of the group: MTV

Name of the group: Physical education

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0
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
TVV	Physical education	Z	0	0+2	Z,L	V
A003TV	Physical Education	Z	2	0+2	L,Z	V
TV-V1	Physical education	Z	1	0+2	Z,L	V
TVV0	Physical education	Z	0	0+2	Z,L	V
TVKLV	Physical Education Course	Z	0	7dní	L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V

Characteristics of the courses of this group of Study Plan: Code=MTV Name=Physical education

TVV	Physical education	Z	0
A003TV	Physical Education	Z	2
TV-V1	Physical education	Z	1
TVV0	Physical education	Z	0
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

Code of the group: 2018_MEEMVOL-K Name of the group: Elective subjects Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0

~Nabídku volitelných předmětů uspořádaných podle kateder najdete na webových stránkách http://www.fel.cvut.cz/cz/education/volitelne-predmety.html\\

List of courses of this pass:

Code	Name of the course	Completion	Credits
A003TV	Physical Education	Z	2
BD0M16FIL	Philosophy 2	Z,ZK	5
BD0M16HVT	History of science and technology 2	Z,ZK	5
Γhis subject traces h	nistorical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate stude	nts' interest in the	history and
traditions of the subj	ect, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life a	and the influence	of technica
	engineers		
BD0M16PSM	Psychology	Z,ZK	5
BD0M16TEO	Theology	Z,ZK	5
This subject provide	es to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the	ne basic theologic	disciplines
are gone through. Th	e subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who	want to get know	Christianit
	- religion from which graws our civilization up.		
BD1M13AEZ	Application of Electrochemical Sources	Z,ZK	5
	tion to chemical reactions commonly present in electrochemical sources, the technologies and manufacturing of commonplace accurate		
	in detail. In the course, there is presented the current state of the field of batteries for different types of applications - electromobility		
	Emphasis is also placed on the trends in simultaneously using of battery storage for balancing network characteristics, especially in c		
BD1M13ASS	Solar Systems Applications	Z,ZK	5
The aim of the coul	rse is to deepen the knowledge of the properties of semiconductor materials and structures that are important for a deeper understa	anding of the semi	conductor
	components technology .		T
BD1M13EKP	Ecology and materials	Z,ZK	5
	ogy from the perspective of ecology. Environmental assessment of the various types of surface protection. Environmental aspects of		
electronics. Environm	nental impacts of electrical production. Ekodesign proposal of the electrical product. Principles of the proposal product for a difficult op	erating environme	nt. Dispos
	of electrical waste.		_
BD1M13JAS1	Quality and Reliability	Z,ZK	6
	efinitions from the area of quality and reliability and their control, philosophy of quality, systems of quality control in the world. Reliabil		-
	area of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types		
-	ents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method agerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits.		-
BD1M13MAD	Control methods and testing in electrotechnology		
-		Z,ZK	5
The course follows th	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including	ng measurement	_
The course follows th	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain	ng measurement ned data.	of importar
The course follows the	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems	ng measurement ned data. Z,ZK	of importar
The course follows the BD1M13SVS The course is focuse	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterization.	ng measurement ned data. Z,ZK zed. Models are b	of importar
The course follows the BD1M13SVS Fine course is focuse an analytical way on the course is focuse.	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems	ng measurement ned data. Z,ZK zed. Models are bi bles are presented	of importar 5 uilt up usind. Compute
The course follows the BD1M13SVS The course is focuse an analytical way on a aided generation of	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems and at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative varial	ng measurement ned data. Z,ZK zed. Models are bibles are presented lodels compilation	of importar 5 uilt up usin d. Compute
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BD1M13SVS The course is focuse an analytical way on aided generation of of a complete model	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems and at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative varial mathematical models and simulation of dynamic behavior of processes and systems are described. Basic methods of component materials are presented. The application on computer modeling and simulation of electrical, thermal and mechanical systems in power electricals.	ng measurement ned data. Z,ZK zed. Models are bibles are presented lodels compilation	of importar 5 uilt up using d. Compute
BD1M13SVS The course is focuse in analytical way on aided generation of a complete model	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems and at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative varial mathematical models and simulation of dynamic behavior of processes and systems are described. Basic methods of component materials are presented. The application on computer modeling and simulation of electrical, thermal and mechanical systems in power electrical electures.	ng measurement ned data. Z,ZK red. Models are bibles are presented codels compilation call engineering codes.	of importar 5 uilt up usin d. Compute i, assembly impletes th
BD1M13SVS The course is focuse in analytical way on aided generation of a complete model	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems and at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative varial mathematical models and simulation of dynamic behavior of processes and systems are described. Basic methods of component materials are presented. The application on computer modeling and simulation of electrical, thermal and mechanical systems in power electrical electures. Power components in electrical engineering	ng measurement ned data. Z,ZK red. Models are bibles are presented codels compilation call engineering codes.	of importar 5 uilt up usin d. Compute i, assembly impletes th
BD1M13SVS The course is focuse in analytical way on a fided generation of f a complete model BD1M13VSE Power semicondu	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems and at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative varial mathematical models and simulation of dynamic behavior of processes and systems are described. Basic methods of component material are presented. The application on computer modeling and simulation of electrical, thermal and mechanical systems in power electric lectures. Power components in electrical engineering actor device (diodes, BJTs, thyristors, MOSFETs and IGBTs) and integraed structures (modules). Structures, function, characteristics	ng measurement ned data. Z,ZK red. Models are bibles are presented codels compilation call engineering codes.	of importar 5 uilt up usin d. Compute i, assembly mpletes th
BD1M13SVS The course is focuse in analytical way on a aided generation of a complete model BD1M13VSE Power semicondu	ne needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, including parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems and at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize the basis of knowledge of relationships between parameters, or using an experimental way. Factorial experiments for qualitative varial mathematical models and simulation of dynamic behavior of processes and systems are described. Basic methods of component material are presented. The application on computer modeling and simulation of electrical, thermal and mechanical systems in power electric lectures. Power components in electrical engineering actor device (diodes, BJTs, thyristors, MOSFETs and IGBTs) and integraed structures (modules). Structures, function, characteristics components of powet electronic. Connection of devices in parallel and in series.	ng measurement ned data. Z,ZK zed. Models are bebles are presented podels compilation cal engineering complex and parameters Z,ZK	5 uilt up usin d. Compute n, assembly mpletes th 5 , Passive
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BD1M16EKE1	Economy of Power Industry	Z,ZK	5			
Fundamentals of	financing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and gas	production and d	stribution.			
Examples of eco	promic evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externalities. Energy p	olicy and energy la	aw in CR.			
	Liberalization and power market development.					
BD1M16EUE1	Economy of Energy Use	Z,ZK	5			
Organization and	energy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characteriza	tion of aggregate,	secondary			
energy	sources. Energy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and	financial analysis.				
BD1MPROJ	Individual project	Z	5			
Independent worl	in the form of a project. A student will choose a topic from a list of topics specified by branch department. The project will be defend	led within the fram	ework of a			
	subject.					
BDIP25	Diploma Thesis	Z	25			
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will						
be specified b	by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the compreh	ensive final exami	nation.			
TV-V1	Physical education	Z	1			
TVKLV	Physical Education Course	Z	0			
TVKZV	Physical Education Course	Z	0			
TVV	Physical education	Z	0			
TVV0	Physical education	Z	0			

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