### Study plan

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

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 full-time

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 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 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

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
B0M16FIL	Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	Z,ZK	5	2P+2S	Z,L	Р
B0M16HVT	History of science and technology 2 Marcela Efmertová Marcela Efmertová (Gar.)	Z,ZK	5	2P+2S	Z,L	Р
B0M16HSD1	History of economy and social studies  Marcela Efmertová	Z,ZK	5	2P+2S	Z,L	Р
B0M16PSM	Psychology Jan Fiala Jan Fiala (Gar.)	Z,ZK	5	2P+2S	Z,L	Р
A003TV	Physical Education  Jiří Drnek	Z	2	0+2	L,Z	Р
B0M16TEO	Theology Vladimír Slámečka Vladimír Slámečka Vladimír Slámečka (Gar.)	Z,ZK	5	2P+2S	Z,L	Р

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

		_,	1
B0M16HVT	History of science and technology 2	Z,ZK	5
This subject traces hi	storical 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 subje	ect, while highlighting the developments in technical education and professional organizations, the process of shaping scientific	life and the influe	nce of technical
engineers			
B0M16HSD1	History of economy and social studies	Z,ZK	5
This subject deals wi	th the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its ai	ms and achieved r	esults as well as
the social and cultura	I development and coexistence of the various ethnical groups in the Czech countries.		
B0M16PSM	Psychology	Z,ZK	5
A003TV	Physical Education	Z	2
B0M16TEO	Theology	Z,ZK	5
This subject provides	to students the basic orientation in christian theology and requires no special previous education. After short philosophic lectu	ire the basic theolo	ogic disciplines
are gone through. The	e subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to one	s who want to get k	know Christianity
- religion from which	graws our civilization up.		

Code of the group: 2018\_MEEMP

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:

B0M16FIL

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
B1M16EKE1	Economy of Power Industry Jiří Vašíček, Oldřich Starý, Tomáš Králík Tomáš Králík Oldřich Starý (Gar.)	Z,ZK	5	2P+2C	L	Р
B1M15IAP	Engineering Applications Jan Kyncl Jan Kyncl (Gar.)	Z,ZK	5	2P+2C	Z	Р
B1M13JAS1	Quality and Reliability Zbyněk Plachý, Pavel Mach, Denis Froš, Martin Molhanec Pavel Mach Pavel Mach (Gar.)	Z,ZK	6	2P+2C	Z	Р
B1MPROJ	Individual project  Jiří Vašíček, Oldřich Starý, Jan Kyncl, Jan Jandera, Karel Künzel, Zdeněk  Müller, Jaroslav Knápek, Iva Mrkvičková, Josef Černohous, Josef  Černohous Jan Jandera (Gar.)	Z	5	0p+4s	Z	Р
B1M15PPE1	Elements and Operation of Electrical Power Systems Zdeněk Müller, Ivo Doležel Zdeněk Müller (Gar.)	Z,ZK	5	2P+2S	Z	Р
B1M14SSE	Machinery and Structures of Power Plants Petr Kočárník, Jiří Šťastný Petr Kočárník Petr Kočárník (Gar.)	Z,ZK	5	2P+2C	Z	Р

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

B1M16EKE1	Economy of Power Industry	Z,ZK	5
Fundamentals of fina	ncing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and ga	as production and o	distribution.
Examples of econom	c evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externalities. Energy p	oolicy and energy la	aw in CR.
Liberalization and pov	ver market development.		
B1M15IAP	Engineering Applications	Z,ZK	5
B1M13JAS1	Quality and Reliability	Z,ZK	6
Terminology and defin	iltions from the area of quality and reliability and their control, philosophy of quality, systems of quality control in the world. Reli	ability as a part of	quality. Basic
definitions from the a	ea of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, ty	pes of warm and co	old standbys.
Reliability of compone	nts and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical me	ethods and tools joi	ned with qual
control, managerial to	ols for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Sta	tistical inspection.	
B1MPROJ	Individual project	Z	5
Independent work in	he form of a project. A student will choose a topic from a list of topics specified by branch department. The project will be defer	nded within the fran	nework of a
subject.			
B1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5
B1M14SSE	Machinery and Structures of Power Plants	Z.ZK	
DIWITTOOL	Machinery and Structures of Fower Flants	<b>∠</b> , <b>∠</b> r\	5

Name of the block: Povinné předměty zaměření Minimal number of credits of the block: 45

The role of the block: PZ

Code of the group: 2018\_MEEMPPS2

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 Elektroenergetika

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
B1M15DEE	Distribution of Electrical Energy Zdeněk Müller, Martin Čerňan, Josef Tlustý, Jiří Vodrážka Zdeněk Müller (Gar.)	Z,ZK	5	2P+2S	Z	PZ
B1M15ENY	Power Plants Zdeněk Müller, Jan Špetlík	Z,ZK	5	2P+2S	L	PZ
B1M15ETT	Electrical Heat Jan Kyncl Jan Kyncl (Gar.)	Z,ZK	5	2P+2S	Z	PZ

Characteristics of the courses of this group of Study Plan: Code=2018\_MEEMPPS2 Name=Compulsory subjects of the specialization

B1M15DEE	Distribution of Electrical Energy	Z,ZK	5
B1M15ENY	Power Plants	Z,ZK	5
B1M15ETT	Electrical Heat	Z,ZK	5

Code of the group: 2018\_MEEMPS

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:

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
B1M13ASS	Solar Systems Application Vítězslav Benda, Jakub Holovský Jakub Holovský Vítězslav Benda (Gar.)	Z,ZK	5	2P+2L	Z	PZ
B1M13EKP	Ecology and materials Ivan Kudláček, Eva Horynová, Jan Weinzettel, Branislav Dzurňák <b>Ivan</b> Kudláček Ivan Kudláček (Gar.)	Z,ZK	5	2P+2L	Z	PZ
B1M14ESP	Electric Machinery and Apparatus Ondřej Lipčák, Pavel Mindl Pavel Mindl Pavel Mindl (Gar.)	Z,ZK	5	2P+2L	Z	PZ
B1M15PRE1	Transmission and Distribution of Electricity Zdeněk Müller, Ivo Doležel, Ladislav Musil Zdeněk Müller (Gar.)	Z,ZK	5	2P+2S	Z	PZ
B1M15TVN	High Voltage Engineering Jan Koller, Jan Hlaváček	Z,ZK	5	2P+2L	L	PZ
B1M14TVM	Theory and Application of Power Converters  Jiří Lettl Jiří Lettl (Gar.)	Z,ZK	5	2P+2L	L	PZ

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

B1M13ASS	Solar Systems Application	Z,ZK	5	ı
Solar energy. Photovolta	iic phenomena. Photovoltaic cells and modules and their characteristics. Photovoltaic systems and their applications. Photo-ti	nermal phenomen	na Photo-thermal	1
power stations. Significa	nce, economic and environmental aspects of solar energy exploitation.			ı

B1M13FKP Ecology and materials

7.7K 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

B1M14FSP Electric Machinery and Apparatus

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.

B1M15PRE1	Transmission and Distribution of Electricity	Z,ZK	5
B1M15TVN	High Voltage Engineering	Z,ZK	5
B1M14TVM	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

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
B1M16EUE1	Economy of Energy Use Jiří Beranovský Jiří Beranovský (Gar.)	Z,ZK	5	2P+2S	L	PV
B1M15ELS	Electrical Light Petr Žák	Z,ZK	5	2P+2L	L	PV
B1M14MDS1	Modeling of Dynamical Systems Petr Kočárník Petr Kočárník (Gar.)	Z,ZK	5	2P+2C	L	PV
B1M13VSE	Power components in electrical engineering Václav Papež Václav Papež Václav Papež (Gar.)	Z,ZK	5	2P+2L	L	PV

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

specialization								
B1M16EUE1	Economy of Energy Use	Z,ZK	5					
Organization and energy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characterization of aggregate, secondary								
energy sources. Energ	y audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and financial	analysis.						
B1M15ELS	Electrical Light	Z,ZK	5					
B1M14MDS1	Modeling of Dynamical Systems	Z,ZK	5					
The course deals with	combining knowledge of the dynamics of rigid bodies, fluid mechanics, aerodynamics, gas dynamics and thermodynamics in the	e compilation of r	nonlinear models					
of dynamic systems. S	eminars are focused on assembling of numeric models in Matlab / Simulink.							
B1M13VSE	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 electronic. Connection of devices in parallel and in series.								
components of power	electronic. Contribution 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	٧
TV-V1	Physical education	Z	1	0+2	Z,L	٧
TVV0	Physical education	Z	0	0+2	Z,L	٧
TVKZV	Physical Education Course	Z	0	7dní	Z	V
TVKLV	Physical Education Course	Z	0	7dní	L	V

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

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

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

Credits in the group: 0

Note on the group: ~Nabídku volitelných předmětů uspořádaných podle kateder najdete na webových stránkách

 $http://www.fel.cvut.cz/cz/education/volitelne-predmety.html \verb|\| |$ 

## List of courses of this pass:

BOMI SPIL  Bowl selection  BOMI SPIN  Bowl selection  BOMI SPIN  Bowl selection  Bowl selectio	Code	Name of the course	Completion	Credits
BOM16FILD BMM16FILD BMM16F	A003TV	Physical Education	Z	2
his subject deals with the history of the Catch booksy in the 18th -24th centuries, it follows the forming of the Catch obtained representation, the similar and cultural development and coalestations of the various extending carry with the first of the subject reasons historical developments in electrical extending the property of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of between additional control of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of between additional control of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of between the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of between the subject is provided to the process of shaping scientific life and the influence of between the subject is observed to students the basic orientation in christian theology and requires no special provious education. After short philosophic lecture the basic theologic discipline report through. The subject is observed in the process of subject is observed to the subject is observed in the process of subject in the subject is observed in the process of subject in the subject is observed in the process of subject is observed in the process of subject in the process of subject in the subject is observed in the subject is observed in the subject in the process of subject in the subject is observed in the subject in the subject is observed in the subject is	B0M16FIL		Z,ZK	5
the social and cultural development and coexistence of the various ethnical groups in the Czech countries.    BoM16HVT	B0M16HSD1	History of economy and social studies	Z,ZK	5
BOM16FW In subject traces helotical developments in electrical engineering branches in the word and in the Czeak Lands. Its utilimate goal is to stimulate students interest in the history or actions of the subject. while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technic engineers  BOM16FSM Psychology Z.Z.K. 5  BOM16FSM Psychology Z.Z.K. 5  BOM16FSM The subject is observed in the subsection of the process of shaping scientific life and the influence of technic engineers  BOM16FSM The subject is observed in the basic orientation in christian threbody and requires no special previous education. After short philosophic leature the basic theologic discipline region strough. The subject is observed in the basic orientation in christian threbody and requires no special previous education. After short philosophic leature the basic theologic discipline region strough. The subject is observed in the process of the strong process of the process of the subject is observed in the process of the p	his subject deals		nd achieved resul	ts as well a
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BOM16PSM Psychology Z,ZK 5 BOM16PSM Psychology 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 thenologic disciplinary growth the property of the proposal product of the proposal product of the property of the proposal product of the proposal product of the property of the proposal product of the product of the proposal product of the pr		1	•	
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BOMISTEO  The subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipline to gone through. The subject is determined not only to believer students who want to know the reliable theology grounding but also above all to ones who want to get know. Christian theology and evident in the subject is determined not only to believer students who want to know the reliable theology grounding but also above all to ones who want to get know. Christian theology and the control of	R0M16PSM	· · · · · · · · · · · · · · · · · · ·	7 7K	5
This subject provides to students the basic orientation in christian theology and requires in special provious education. After short philosophic lecture the basic theologic disciplinary or gone through. The subject is determined not only to believer subdents who want to know the reliable theologic grounding but allow above all to ones who want to get know Christian region from which graws our civilization up.  BIM13ASS   Solar Systems Application   Z.ZK   5   Olar energy Photovoltaic phenomena. Photovottaic cells and modules and their characteristics. Photovoltaic systems and their applications. Photov-thermal phenomena. Photov-thermal phenomena. Photov-thermal phenomena. Photovoltaic phenomena. Photovoltaic systems and their applications. Photov-thermal phenomena. Photov-thermal phenom				
BIMISASS   Solar Systems Application   Solar Systems and their applications, Photo-therm alphenomena Photo-therm   Downs stations Significance, economic and environmental aspects of solar energy exploitation.   Solar Systems   Solar S		,	,	I
BIMI3ASS   Solar Systems Application   Z.ZK   5		<del></del> ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	_	-
BIM13URS   Some and their applications. Photo-thermal phenomena. Photo-		- religion from which graws our civilization up.		
power stations. Significance. economic and environmental aspects of solar energy exploitation.    Ecology and materials   Ecology Fund materials   Z_ZK   5	B1M13ASS	Solar Systems Application	Z,ZK	5
BIM13DST   Electrical Technology from the perspective of ecology Environmental answers of the visconine protection Environmental aspects of protective systems used in technology from the perspective of ecology Environmental proposal of the electrical product. Principles of the proposal product for a difficult operating environment. Disposition of the electrical product. Principles of the proposal product for a difficult operating environment. Disposition of the electrical product in the world. Principles of the proposal product for a difficult operating environment. Disposition of the electrical product principles of the proposal product for a difficult operating environment. Disposition of the electrical product principles of the proposal product for a difficult operating environment. Disposition of the electrical production of the product principles of the proposal product for a difficult operating environment. Disposition of the electrical production of the production of the principles of the proposal product for a difficult operating environment. Disposition of the electrical production of the principles of the proposal product for a difficult operation of the electrical production of the principles of the proposal product of the principles of the proposal product of the principles of the principles of the proposal product of the principles of the proposal product of the principles of the	Solar energy. Photo		nal phenomena.Ph	oto-therm
Electrical Technology from the perspective of ecology. Environmental assessment of the various types of surface protection. Environmental impacts of electrical production. Exodesign proposal of the electrical product product for a difficult operating environment. Dispos of electrical product in the control of the proposal product for a difficult operating environment. Dispos of electrical waste.  BIM13JAS1   Quality and Reliability  Quality and Reliability  Quality and Reliability  Z,ZK   6  Ferminology and definitions from the area of quality and reliability and their basic characteristics. Back-up using a warm and cold standby, types of warm and cold standby on the control, philosophy of quality, systems of quality control in the world. Reliability as a part of quality. Basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types of warm and cold standby on control, managerial tools for quality operation and scannegoristics. Back-up using a warm and cold standby, types of warm and cold standby control, managerial tools for quality operations and scannegoristics. Back-up using a membro of a list Elasse statistical membroad and tools pinned with qual control, managerial tools for quality operations. An advantage and production of produces in part of a process. Taguchi loss function. Audits. Statistical inspect.  BIM14SEP   Electric Machinery and Apparatus  BIM14ESP   Electric Machinery and Electrical engineering and stress of their components, systems with modern semiconduct evices and their protection circuits, testing adespeed cortor. Influence of harmonic managerial field. Strength and speed cortor. Influence of harmonic managerial field. Strength and speed cortor. Brown and applications of power semiconductor converted in both who with the complication of nonlinear mode deal				
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BIM13AS1   Quality and Reliability 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. Based definitions from the area of reliability, based distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, spees of warm and cold standby, pose of warm and cold standby deliability 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. Tending the properties of quality. Qarability of a process. Tending to provide the quality control. Tending the properties of quality. Qarability of a process. Tending to structure, surpel list structure, surp	iectionics. Environ		eraung environme	iii. Dispos
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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.  B1M15DEE Distribution of Electrical Energy Z,ZK 5 B1M15ELS Electrical Light Z,ZK 5 B1M15ENY Power Plants Z,ZK 5 B1M15ENY Power Plants Z,ZK 5 B1M15ETT Electrical Heat Z,ZK 5 B1M15IAP Engineering Applications Z,ZK 5 B1M15IAP Engineering Applications Z,ZK 5 B1M15PPE1 Elements and Operation of Electrical Power Systems Z,ZK 5 B1M15PPE1 Transmission and Distribution of Electricity Z,ZK 5 B1M15TVN High Voltage Engineering Z,ZK 5 B1M15TVN High Voltage Engineering Z,ZK 5 B1M16EKE1 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 distribution. Examples of economic evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externallities. Energy policy and energy law in CR. Liberalization and power market development.  B1M16EUE1 Corganization and energy management of company, buildings or energy systems. Energy used and consumption, energy balance. Energy characterization of aggregate, secondar energy sources. Energy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and financial analysis.  B1MPROJ Individual project of the prices of the project will be defended within the framework of a financial 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 defended within the framework of a financial and the first memory of the project will be defended within the framework of a financial and the first memory.				
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BDIP25	Diploma Thesis	Z	25	
Independent final	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	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.			
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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