## 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 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: 56 The role of the block: P

Code of the group: 2018\_MEEMEP 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
BE1M16EKE1	Economy of Power Industry Tomáš Králík, Július Bemš Tomáš Králík Tomáš Králík (Gar.)	Z,ZK	5	2P+2S	L	Р
BE1M15PPE1	Elements and Operation of Electrical Power Systems Ghaeth Fandi, Zden k Müller Zden k Müller (Gar.)	Z,ZK	5	2P+2S	Z	Р
BE1M15IAP	Engineering Applications Jan Kyncl, Ladislav Musil	Z,ZK	5	2P+2C	Z	Ρ
BE1MPROJ	Individual project Ji í Vaší ek, Zden k Müller, Jan Kyncl, Jan Jandera, Josef ernohous Josef ernohous Jan Jandera (Gar.)	Z	5	0p+4s	Z	Ρ
BE1M14SSE	Machinery and Structures of Power Plants Evžen Thöndel Evžen Thöndel	Z,ZK	5	2P+2C	Z	Ρ
BE1M13JAS1	Quality and Reliability Pavel Mach, Martin Molhanec Pavel Mach Pavel Mach (Gar.)	Z,ZK	6	2P+2C	Z,L	Р

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

BE1M16EKE1	Economy of Power Industry	Z,ZK	5
Fundamentals of financ	ing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and ga	is 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	law in CR.
Liberalization and powe	r market development.		
BE1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5
The course introduces I	pasic technical principles of electricity transmission and distribution. There are explained parameters of power systems key el	ements, steady s	tates, transient
and failure phenomena,	main principles of dimensioning and protecting, power quality and its control and electrical machines characteristics and util	ization.	
BE1M15IAP	Engineering Applications	Z,ZK	5
The aim of the course is	to get an overview of solving basic mathematical problems occurring in engineering practice using computer algebra system	ns	
BE1MPROJ	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.			
BE1M14SSE	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 structu	ure, properties and	d characteristics.
BE1M13JAS1	Quality and Reliability	Z,ZK	6
Terminology and definit	ons from the area of quality and reliability and their control, philosophy of quality, systems of quality control in the world. Relia	ability as a part of	f quality. Basic
definitions from the area	a of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, typ	oes of warm and	cold standbys.
Reliability of component	s and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical me	thods and tools jo	pined with quality
control, managerial tool	s for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Sta	tistical inspection	

### Code of the group: 2018\_MEEMEDIP 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

	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\_MEEMEDIP Name=Diploma Thesis

BDIP25	Diploma Thesis	Z	25
Independent final comp	rehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his of	or her branch of s	tudy, 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 compreher	sive final examination	ation.

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\_MEEMEPS 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
BE1M13EKP	<b>Ecology and Materials</b> Pavel Žák, Zuzana Šaršounová, Jan Weinzettel, Eva Horynová, Branislav Dzur ák, Michael Fridrich <b>Jan Weinzettel</b> Ivan Kudlá ek (Gar.)	Z,ZK	5	2P+2L	z	PZ
BE1M14ESP	Electric Machinery and Apparatus Pavel Mindl, Miroslav Chomát Miroslav Chomát Pavel Mindl (Gar.)	Z,ZK	5	2P+2L	Z	ΡZ
BE1M15TVN	High Voltage Engineering Jan Hlavá ek	Z,ZK	5	2P+2L	L	PZ
BE1M13ASS	Solar Systems Application Rupendra Kumar Sharma, Jakub Holovský, Vít zslav Benda, Arao Minamau Pambo <b>Jakub Holovský</b> Vít zslav Benda (Gar.)	Z,ZK	5	2P+2L	Z	PZ
BE1M14TVM	Theory and Application of Power Converters Ji í Letti Ji í Letti Ji í Letti (Gar.)	Z,ZK	5	2P+2L	L	PZ
BE1M15PRE1	Transmission and Distribution of Electricity Ghaeth Fandi, Zden k Müller Zden k Müller Zden k Müller (Gar.)	Z,ZK	5	2P+2S	Z	PZ

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

BE1M13EKP Ecology and Materials 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. BE1M14ESP Electric Machinery and Apparatus 7.7K 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. BE1M15TVN High Voltage Engineering Z,ZK 5 The course contains the fundamental theories of high voltage engineering with respect to application in electrical power engineering. The knowledge of high voltage generators, measurement technique of high voltages and currents, properties of insulation systems, diagnostics methods and electrical discharges and their elimination. The practical laboratory exercises in high voltage laboratory are included. BE1M13ASS Solar Systems Application Z.ZK 5 Solar energy. Photovoltaic phenomena. Photovoltaic cells and modules and their characteristics. Photovoltaic systems and their applications. Photo-thermal phenomena. Photo-thermal power stations. Significance, economic and environmental aspects of solar energy exploitation. BE1M14TVM 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.

e also deals with synchronous generators characteristics in different operational states.	ns, specific aspects	of system s	1	Z,ZK s and possibilitie	5 es to cont
oup: 2018_MEEMEPPS3					
•					
	5 credits				
		ses			
	ologické svsté	my			
Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)			Scope	Semester	Role
	Z,ZK	5	2P+2L	Z	PZ
Control methods and testing in electrotechnology	Z,ZK	5	2P+2L	L	PZ
Simulation of Production Sytems Pavel Mach	Z,ZK	5	2P+2C	Z	PZ
Pavel Mach the courses of this group of Study Plan: Code=2018_MEEMEPPS		_	subjects	of the spec	
	nd manufacturing of	f commonpla	1	, ,	•
etail. In the course, there is presented the current state of the field of batteries for differer	nt types of application	ons - electro	mobility, sta	tionary backup	systems
is is also placed on the trends in simultaneously using of battery storage for balancing n	etwork characteristi	cs, especial	ly in combin	nation with the I	RES.
Control methods and testing in electrotechnology			1	, ,	5
			s, including	measurement	of import
	oup: Compulsory subjects of the specialization         redits in the group: In this group you have to gain 18         ourses in the group: In this group you have to comp         proup: 15         oup:       Specializace Technol         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.)         Application of Electrochemical Sources         Control methods and testing in electrotechnology         Simulation of Production Sytems         Pavel Mach	oup: Compulsory subjects of the specialization         redits in the group: In this group you have to gain 15 credits         ourses in the group: In this group you have to complete 3 course         group:       Specializace Technologické systé         Name of the course / Name of the group of courses       Completion         members)       Tutors, authors and guarantors (gar.)       Completion         Application of Electrochemical Sources       Z,ZK         Simulation of Production Sytems       Z,ZK         Simulation of Electrochemical Sources       Z,ZK         the courses of this group of Study Plan: Code=2018_MEEMEPPS3 Name=Com         Application of Electrochemical Sources       to chemical reactions commonly present in electrotechnology         tail. In the course, there is presented the current state of the field of batteries for different types of application is also placed on the trends in simultaneously using of battery storage for balancing network characteristic         Control methods and testing in electrotechnology       ease of application of the current state of the field of batteries for different types of application is also placed on the trends in simultaneously using of battery storage for balancing network characteristic         Control methods and testing in electrotechnology       ease of electrical production and research. It discussed diagnostic of materials and measurements of material and work environment. The subject also includes testing safe function of products and evaluating the obtan	oup: Compulsory subjects of the specialization         redits in the group: In this group you have to gain 15 credits         ourses in the group: In this group you have to complete 3 courses         group: 15         oup: Specializace Technologické systémy         Name of the course / Name of the group of courses ( <i>in case of groups of courses the list of codes of their members</i> ) Tutors, authors and guarantors (gar.)       Completion       Credits         Application of Electrochemical Sources       Z,ZK       5         Simulation of Production Sytems       Z,ZK       5         Simulation of Electrochemical Sources       Z,ZK       5         Application of Electrochemical Sources       Z,ZK       5         Simulation of Production Sytems       Z,ZK       5         Application of Electrochemical Sources       commonly present in electrotechnology       5         Application of Electrochemical Sources       commonly present in electrotechnologies and manufacturing of commonple tail. In the course, there is presented the current state of the field of batteries for different types of applications - electroc is is also placed on the trends in simultaneously using of battery storage for balancing network characteristics, especial         Control methods and testing in electrotechnology       eeds of electrical production and research. It discussed diagnostic of materials and measurements of material properties and work environment. The subject also includes testing safe function of products and evaluating the obt	oup: Compulsory subjects of the specialization         redits in the group: In this group you have to gain 15 credits         ourses in the group: In this group you have to complete 3 courses         proup:       Specializace Technologické systémy         Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)       Completion       Credits       Scope         Tutors, authors and guarantors (gar.)       Application of Electrochemical Sources       Z,ZK       5       2P+2L         Simulation of Production Sytems       Z,ZK       5       2P+2L         Simulation of Production Sytems       Z,ZK       5       2P+2C         the courses of this group of Study Plan: Code=2018_MEEMEPPS3 Name=Compulsory subjects       Application of Electrochemical Sources       Z         Application of Electrochemical Sources       Z       Z       Z         Application of Electrochemical Sources       Z <td>in construction       in the group: In this group you have to gain 15 credits         in case of groups of courses the list of codes of their members)       Specializace Technologické systémy         Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)       Completion       Credits       Scope       Semester         Application of Electrochemical Sources       Z,ZK       5       2P+2L       Z         Control methods and testing in electrotechnology       Z,ZK       5       2P+2C       Z         the courses of this group of Study Plan: Code=2018_MEEMEPPS3 Name=Compulsory subjects of the special sources to the field of batteries for different types of applications - electronability, stationary backup is a solar of the site of battery stores for different types of applications - electronability, stationary backup is a solar of a testing in electrotechnology       Z,ZK</td>	in construction       in the group: In this group you have to gain 15 credits         in case of groups of courses the list of codes of their members)       Specializace Technologické systémy         Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)       Completion       Credits       Scope       Semester         Application of Electrochemical Sources       Z,ZK       5       2P+2L       Z         Control methods and testing in electrotechnology       Z,ZK       5       2P+2C       Z         the courses of this group of Study Plan: Code=2018_MEEMEPPS3 Name=Compulsory subjects of the special sources to the field of batteries for different types of applications - electronability, stationary backup is a solar of the site of battery stores for different types of applications - electronability, stationary backup is a solar of a testing in electrotechnology       Z,ZK

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.

Name of the block: Compulsory elective courses Minimal number of credits of the block: 15 The role of the block: PV

Code of the group: 2018\_MEEMEPV1

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
BE1M16EUE1	Economy of Energy Use Ji í Beranovský, Michaela Valentová Michaela Valentová Ji í Beranovský (Gar.)	Z,ZK	5	2P+2S	L	PV
BE1M15ELS	Electrical Light Marek Bálský	Z,ZK	5	2P+2L	L	PV
BE1M14MDS1	Modeling of Dynamical Systems	Z,ZK	5	2P+2C	L	PV
BE1M13VSE	Power components in electrical engineering Ji í Hájek Ji í Hájek Ji í Hájek (Gar.)	Z,ZK	5	2P+2L	L	PV

# Characteristics of the courses of this group of Study Plan: Code=2018\_MEEMEPV1 Name=Compulsory elective subjects of the specialization

Z,ZK	5
zation of aggrega	te, secondary
analysis.	
Z,ZK	5
s of resolving light	ting systems for
	zation of aggrega analysis.

BE1M14MDS1	Modeling of Dynamical Systems	Z,ZK	5
The course deals with c	ombining knowledge of the dynamics of rigid bodies, fluid mechanics, aerodynamics, gas dynamics and thermodynamics in th	e compilation of r	nonlinear models
of dynamic systems. Se	minars are focused on assembling of numeric models in Matlab / Simulink.		
BE1M13VSE	Power components in electrical engineering	Z,ZK	5
Power semiconductor d	evice (diodes, BJTs, thyristors, MOSFETs and IGBTs) and integraed structures (modules). Structures, function, characteristi	cs and parameter	s, Passive
components of powet e	lectronic. Connection of devices in parallel and in series.		

Code of the group: 2018\_MEEMEH 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
BE0M16HSD1	History of economy and social studies	Z,ZK	5	2P+2S	Z,L	PV
BE0M16HVT	History of science and technology 2	Z,ZK	5	2P+2S	Z,L	PV
BE0M16FIL	Philosophy 2 Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	Z,ZK	5	2P+2S	Z,L	PV
BE0M16PSM	Psychology	Z,ZK	5	2P+2S	Z,L	PV
BE0M16TEO	Theology	Z,ZK	4	2P+2S	L	PV

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

BE0M16HSD1	History of economy and social studies	Z,ZK	5
This subject deals with	the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its air	ns and achieved re	esults as well as
the social and cultural	development and coexistence of the various ethnical groups in the Czech countries.		
BE0M16HVT	History of science and technology 2	Z,ZK	5
This subject traces his	torical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate st	udents' interest in	the history and
traditions of the subject	t, while highlighting the developments in technical education and professional organizations, the process of shaping scientific	life and the influer	nce of technical
engineers			
engineers BE0M16FIL	Philosophy 2	Z,ZK	5
	Philosophy 2 Psychology	Z,ZK Z,ZK	5 5
BE0M16FIL		,	5 5 4
BE0M16FIL BE0M16PSM BE0M16TEO	Psychology	Z,ZK Z,ZK	5 5 4 ogic disciplines
BEOM16FIL BEOM16PSM BEOM16TEO This subject provides t	Psychology Theology	Z,ZK Z,ZK re the basic theolo	

Name of the block: Elective courses Minimal number of credits of the block: 0 The role of the block: V

Code of the group: 2018\_MEEMEVOL 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: ~Student can choose arbitrary subject of themagister's program (EEM - Electrical Engineering, Power Engineering and Management, EK - Electropics and Communications, KYR - Cybernetics and Robotic

Engineering and Management, EK - Electronics and Communications, KYR - Cybernetics and Robotics, OI - Open Informatics, OES - Open Electronics Systems) which is not part of his curriculum. Student can choose with consideration of recommendation of the branch guarantee. You can find a selection of optional courses organized by the departments on the web site http://www.fel.cvut.cz/cz/education/volitelne-predmety.html

## List of courses of this pass:

Code	Name of the course	Completion	Credits	
BDIP25	Diploma Thesis	Z	25	
-	comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or h	-		
	y branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehe			
BE0M16FIL	Philosophy 2	Z,ZK	5	
BE0M16HSD1	History of economy and social studies	Z,ZK	5	
This subject deals w	vith the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its aims ar the social and cultural development and coexistence of the various ethnical groups in the Czech countries.	na achievea result	is as well as	
BE0M16HVT	History of science and technology 2	Z.ZK	5	
	historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate stude	,	-	
	oject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life a engineers			
BE0M16PSM	Psychology	Z,ZK	5	
BE0M16TEO	Theology	Z,ZK	4	
	es to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture th	,	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.				
BE1M13AEZ	Application of Electrochemical Sources	Z,ZK	5	
	ction to chemical reactions commonly present in electrochemical sources, the technologies and manufacturing of commonplace accu	mulator batteries	and primary	
	d 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			
BE1M13ASS	Solar Systems Application	Z,ZK	5	
Solar energy. Photo	voltaic phenomena. Photovoltaic cells and modules and their characteristics. Photovoltaic systems and their applications. Photo-therm	al phenomena.Ph	noto-thermal	
	power stations. Significance, economic and environmental aspects of solar energy exploitation.	7 71/		
BE1M13EKP	Ecology and Materials	Z,ZK	5	
	mental impacts of electrical production. Ekodesign proposal of the electrical product. Principles of the proposal product for a difficult op of electrical waste.			
BE1M13JAS1	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	,	-	
definitions from the	e area of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types			
deminitions norm and	e area of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types	s of warm and cold	l standbys.	
	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method			
Reliability of compor control, mar	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method nagerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits.	ds and tools joined Statistical inspect	l with quality tion.	
Reliability of comport control, mar BE1M13MAD	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method nagerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Control methods and testing in electrotechnology	ds and tools joined Statistical inspect Z,ZK	l with quality tion. 5	
Reliability of compor control, mar BE1M13MAD The course follows t	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method nagerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Control methods and testing in electrotechnology the needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, includi	ds and tools joined Statistical inspect Z,ZK Ing measurement	l with quality tion. 5	
Reliability of compor control, mar BE1M13MAD The course follows t	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method nagerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Control methods and testing in electrotechnology the needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, includi parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain	ds and tools joined Statistical inspect Z,ZK ing measurement ned data.	I with quality tion. 5 of important	
Reliability of compor control, mar BE1M13MAD The course follows t BE1M13SVS	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method nagerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Control methods and testing in electrotechnology the needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, includi parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtain Simulation of Production Sytems	ds and tools joined Statistical inspect Z,ZK Ing measurement ned data. Z,ZK	l with quality tion. 5 of important 5	
Reliability of compor control, mar BE1M13MAD The course follows t BE1M13SVS The course is focus	nents and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical method nagerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Control methods and testing in electrotechnology the needs of electrical production and research. It discussed diagnostic of materials and measurements of material properties, includi parameters of production and work environment. The subject also includes testing safe function of products and evaluating the obtai Simulation of Production Sytems ed at methods of static and dynamic models of processes and systems forming. Basic types of models are described and characterize	ds and tools joined Statistical inspect Z,ZK Ing measurement ned data. Z,ZK zed. Models are bu	d with quality tion. 5 of important 5 uilt up using	
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BE1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5		
	basic technical principles of electricity transmission and distribution. There are explained parameters of power systems key elem		s, transient		
and failure	e phenomena, main principles of dimensioning and protecting, power quality and its control and electrical machines characteristic	s and utilization.			
BE1M15PRE1	Transmission and Distribution of Electricity	Z,ZK	5		
The course introduces	particular topics concerning transmission and distribution systems, mainly load flow solutions, specific aspects of system steady sta	ates and possibiliti	es to control		
	these states. The course also deals with synchronous generators characteristics in different operational states.				
BE1M15TVN	High Voltage Engineering	Z,ZK	5		
The course contains the fundamental theories of high voltage engineering with respect to application in electrical power engineering. The knowledge of high voltage generators,					
measurement techniqu	ue of high voltages and currents, properties of insulation systems, diagnostics methods and electrical discharges and their elimina	ation. The practica	l laboratory		
exercises in high voltage laboratory are included.					
BE1M16EKE1	Economy of Power Industry	Z,ZK	5		
Fundamentals of fina	ancing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and gas	production and di	stribution.		
Examples of econor	nic evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externalities. Energy po	olicy and energy la	aw in CR.		
	Liberalization and power market development.				
BE1M16EUE1	Economy of Energy Use	Z,ZK	5		
Organization and ene	rgy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characteriza	tion of aggregate,	secondary		
energy sou	arces. Energy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and	financial analysis.			
BE1MPROJ	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 defend	ed within the fram	ework of a		
	subject.				

For updated information see <u>http://bilakniha.cvut.cz/en/f3.html</u> Generated: day 2025-07-15, time 00:05.