Study plan

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

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	Ρ
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 histe	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 influe	nce 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 lectur	re the basic theolo	ogic 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	Z,ZK	5	14KP+6KC	L	Р
BD1M15IAP	Engineering Applications Jan Kyncl	Z,ZK	5	14KP+6KC	Z	Ρ
BD1M13JAS1	Quality and Reliability Pavel Mach, Martin Molhanec Pavel Mach Pavel Mach (Gar.)	Z,ZK	6	14KP+6KC	Z	Ρ
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	Ρ
BD1M15PPE1	Elements and Operation of Electrical Power Systems Stanislav Bou ek, Jan Hlavá ek	Z,ZK	5	14KP+6KS	Z	Ρ
BD1M14SSE	Machinery and Structures of Power Plants Petr Ko árník 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 finar	cing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and ga	as production and	distribution.
Examples of economi	evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externalities. Energy p	olicy and energy	aw in CR.
Liberalization and pov	er market development.		
BD1M15IAP	Engineering Applications	Z,ZK	5
BD1M13JAS1	Quality and Reliability	Z,ZK	6
Terminology and defir	tions 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 ar	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 o	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 jo	ined with quality
control, managerial to	ols for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Sta	atistical inspection	
BD1MPROJ	Individual project	Z	5
Independent work in t	e 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 fra	mework of a
a sub-la at			
subject.			
BD1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5
	Elements and Operation of Electrical Power Systems Machinery and Structures of Power Plants	Z,ZK Z,ZK	5 5

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_MEEMPPS1-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 Elektrické pohony

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
BD1M14DEP	Digital Control of Electric Drives	Z,ZK	5	14+6	L	PZ
BD1M14EPT1	Electric Drives and Traction	Z,ZK	5	14KP+6KL	Z	PZ
BD1M14REP	Control and Regulation of Electric Drives	Z,ZK	5	14+6	Z	PZ

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMPPS1-K Name=Compulsory subjects of the specialization

BD1M14DEP	Digital Control of Electric Drives	Z,ZK	5
The course deals with b	asics blocks of control computer for electric drive. It is also discussed the issue of discretization drive control and software an	nd hardware reso	urces needed for
developing and debugg	ing control program for electric drive.		
BD1M14EPT1	Electric Drives and Traction	Z,ZK	5
The course focuses on	he principles of designing electric drives with AC motors in different ways and different types of load, reliability, design for explo	osive environmen	ts and for special
purposes and the nece	ssary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, elec	tric locomotives,	as well as the
systems of hybrid cars	and electric vehicles.		
BD1M14REP	Control and Regulation of Electric Drives	7.7K	5

The course is focused to introduction to the problems of the theory of continuous control of electrical drives and power converters. During the semester are discussed the basics of feedback control, transmission system, determining the stability of the system, including controller types and methods of tuning.

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:

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	ΡZ
BD1M13EKP	Ecology and materials Ivan Kudlá ek Ivan Kudlá ek (Gar.)	Z,ZK	5	14KP+6KC	Z	ΡZ
BD1M14ESP	Electric Machinery and Apparatus Pavel Mindl, Vít Hlinovský Pavel Mindl	Z,ZK	5	14KP+6KL	Z	ΡZ
BD1M15PRE1	Transmission and Distribution of Electricity Stanislav Bou ek	Z,ZK	5	14KP+6KS	Z	ΡZ
BD1M15TVN	High Voltage Engineering	Z,ZK	5	14KP+6KL	L	PZ
BD1M14TVM	Theory and Application of Power Converters	Z,ZK	5	14KP+6KL	L	ΡZ

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 under	standing of the se	emiconductor		
components technology	·.				
BD1M13EKP	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.					
BD1M14ESP	Electric Machinery and Apparatus	Z,ZK	5		
The course is focused of	n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, sys	tems with moder	n semiconductor		
devices and their protec	tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. For	undamentals of c	ommutation. The		
transformer efficiency, v	oltage drop. Transients - switch to the network, a short circuit. Mathematical model of synchronous and asynchronous maching	nes. A rotating ma	agnetic field.		
Induction machine, start	ing and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a r	network. Torque, s	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					
pasics 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 Ji í Beranovský (Gar.)	Z,ZK	5	14KP+6KS	L	PV
BD1M15ELS	Electrical Light	Z,ZK	5	14KP+6KL	L	PV
BD1M14MDS1	Modeling of Dynamical Systems	Z,ZK	5	14KP+6KC	L	PV
BD1M13VSE	Power components in electrical engineering	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

BD1M16EUE1	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	y characterization of aggregate	, secondary
energy sources. Ener	gy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy a	nd financial analysis.	
BD1M15ELS	Electrical Light	Z,ZK	5
BD1M14MDS1	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 thermody	namics in the compilation of no	nlinear mode
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, c	haracteristics and parameters,	Passive
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 Ji í Drnek	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
	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 Note on the group: ~Nabídku

~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:

	Name of the course Completion	n Credit
A003TV	Physical Education Z	2
BD0M16FIL	Philosophy 2 Z,ZK	5
BD0M16HVT	History of science and technology 2 Z,ZK	5
	prical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in	the history ar
traditions of the subject	, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influer engineers	ce of technic
BD0M16PSM	Psychology Z,ZK	5
BD0M16TEO	Theology Z,ZK	5
This subject provides to	o students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theology	gic discipline
re gone through. The s	ubject 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 k - religion from which graws our civilization up.	ow Christian
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 s components technology.	emiconductor
BD1M13EKP	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 systematical ecology and the second ecology a	tems used in
lectronics. Environmen	tal impacts of electrical production. Ekodesign proposal of the electrical product. Principles of the proposal product for a difficult operating environ of electrical waste.	iment. Dispos
BD1M13JAS1	Quality and Reliability Z,ZK	6
	tions from the area of quality and reliability and their control, philosophy of quality, systems of quality control in the world. Reliability as a part o	
	ea of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types of warm and	
	s and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical methods and tools joi	-
-	rial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Statistical ins	
BD1M13VSE	Power components in electrical engineering Z,ZK	5
Power semiconducto	r device (diodes, BJTs, thyristors, MOSFETs and IGBTs) and integraed structures (modules). Structures, function, characteristics and parameter of devices in parallel and in parallel	ers, Passive
	components of powet electronic. Connection of devices in parallel and in series.	-
BD1M14DEP	Digital Control of Electric Drives Z,ZK	5
he course deals with b	asics blocks of control computer for electric drive. It is also discussed the issue of discretization drive control and software and hardware resou developing and debugging control program for electric drive.	ces needed
BD1M14EPT1	Electric Drives and Traction Z,ZK	5
1	he principles of designing electric drives with AC motors in different ways and different types of load, reliability, design for explosive environments	-
	The principles of designing electric drives with AC motors in different ways and different types of load, reliability, design of explosive environments	
		-
	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives,	-
purposes and the nece	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles.	as well as the
purposes and the nece BD1M14ESP	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK	as well as the
purposes and the neco BD1M14ESP	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles.	as well as the
BD1M14ESP The course is focused o levices and their protect transformer efficiency	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of control of synchronous and asynchronous machines. A rotating not system of synchronous machines. A rotating not synchronous machines.	as well as the 5 semiconduct mmutation. Th agnetic field.
purposes and the nece BD1M14ESP	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of conduct on the network, a short circuit. Mathematical model of synchronous and asynchronous machines. A rotating ming and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, stating and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, stating and speed control.	as well as the 5 semiconduct mmutation. Th agnetic field.
purposes and the nece BD1M14ESP The course is focused o levices and their protec transformer efficiency, nduction machine, start	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of control control. Transients - switch to the network, a short circuit. Mathematical model of synchronous and asynchronous machines. A rotating not speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, st capacity.	as well as the 5 semiconduct mmutation. Th agnetic field. ability, overloa
BD1M14ESP BD1W14ESP he course is focused o evices and their protec transformer efficiency, nduction machine, start BD1M14MDS1	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of construing and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, st capacity. Modeling of Dynamical Systems Z,ZK	semiconduct mmutation. The agnetic field. ability, overloa
BD1M14ESP BD1M14ESP The course is focused o levices and their protect transformer efficiency, induction machine, start BD1M14MDS1	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of constrained to the network, a short circuit. Mathematical model of synchronous and asynchronous machines. A rotating noting and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, st capacity. Modeling of Dynamical Systems Z,ZK problements in the compilation of networks of the dynamics of rigid bodies, fluid mechanics, aerodynamics, gas dynamics and thermodynamics in the compilation of networks.	semiconduct mmutation. The agnetic field. ability, overloa
purposes and the neck BD1M14ESP The course is focused o levices and their protect transformer efficiency, induction machine, start BD1M14MDS1 The course deals with co	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of construct and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, st capacity. Modeling of Dynamical Systems Z,ZK orbining knowledge of the dynamics of rigid bodies, fluid mechanics, aerodynamics, gas dynamics and thermodynamics in the compilation of numeric models in Matlab / Simulink.	semiconduct mmutation. TI agnetic field. ability, overloa
purposes and the neck BD1M14ESP The course is focused o levices and their protect transformer efficiency, induction machine, start BD1M14MDS1 The course deals with co BD1M14REP	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of constrained to the network, a short circuit. Mathematical model of synchronous and asynchronous machines. A rotating noting and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, st capacity. Modeling of Dynamical Systems Z,ZK problements in the compilation of networks of the dynamics of rigid bodies, fluid mechanics, aerodynamics, gas dynamics and thermodynamics in the compilation of networks.	semiconduct mmutation. The agnetic field. ability, overloa 5 onlinear mode
purposes and the neck BD1M14ESP The course is focused o levices and their protect transformer efficiency, induction machine, start BD1M14MDS1 The course deals with co BD1M14REP	essary technical documentation. Students learn the basics of electric traction drives for trams in public transport systems, electric locomotives, systems of hybrid cars and electric vehicles. Electric Machinery and Apparatus Z,ZK n contact and solid-state switching devices in LV networks. Basic topologies AC switches and stress of their components, systems with modern tion circuits, testing electrical devices. The course also deals with the general theory of electrical machines. Magnetic field. Fundamentals of constrained and speed control. Influence of harmonic magnetic field. Single-phase induction motor. Work synchronous machine on a network. Torque, st capacity. Modeling of Dynamical Systems Z,ZK of dynamic systems. Seminars are focused on assembling of numeric models in Matlab / Simulink. Z,ZK Control and Regulation of Electric Drives Z,ZK	semiconduct mmutation. TI agnetic field. ability, overloa 5 onlinear mode
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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 defend	ed 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 l	her branch of stud	y, which will
be specified b	y 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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