## Recomended pass through the study plan

# Name of the pass: Specialization Bioinformatics - Passage through study

Faculty/Institute/Others: Faculty of Electrical Engineering

Department:

Pass through the study plan: Medical electronics and bioinformatics

Branch of study guranteed by the department: Welcome page

Guarantor of the study branch:

Program of study: Medical Electronics and Bioinformatics

Type of study: Follow-up master full-time

Note on the pass:

Coding of roles of courses and groups of courses:

P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):

KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

#### Number of semester: 1

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BEZM	Safety in Electrical Engineering for a master's degree Vladimír K la, Radek Havlí ek, Ivana Nová, Josef ernohous, Pavel Mlejnek Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	Z	Р
BAM31LET	Medical Instrumentation and Devices Jan Havlík Jan Havlík Jan Havlík (Gar.)	Z,ZK	6	2P+2L	Z	Р
B4M36SAN	Statistical Data Analysis Ji í Kléma Ji í Kléma Ji í Kléma (Gar.)	Z,ZK	6	2P+2C	Z	Р
B4M33PAL	Advanced algorithms Ond ej Drbohlav, Daniel Pr ša Daniel Pr ša (Gar.)	Z,ZK	6	2P+2C	Z	PS
BE4M33SSU	Statistical Machine Learning Jan Drchal, Vojt ch Franc Vojt ch Franc (Gar.)	Z,ZK	6	2P+2C	Z	PS
2018_MBIOPPV1	Povinn volitelné p edm ty BAM31ADA,B2M31AEDA, (see the list of groups below)	Min. cours. 4 Max. cours. 4	Min/Max 24/24			PV

## Number of semester: 2

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
BAM31BSG	Biological signals Roman mejla Roman mejla Roman mejla (Gar.)	Z,ZK	6	2P+2L	L	Р
BAM33ZSL	Medical Imaging Systems Jan Kybic, Vít Herynek, André Sopczak Jan Kybic Jan Kybic (Gar.)	Z,ZK	6	2P+2C	L	Р
BAM36BIN	Bioinformatics Jií Kléma Jií Kléma Jií Kléma (Gar.)	Z,ZK	6	2P+2C	L	PS
В4М35КО	Combinatorial Optimization Zden k Hanzálek Zden k Hanzálek (Gar.)	Z,ZK	6	3P+2C	L	PS
B4M36MBG	Molecular Biology and Genetics  Martin Pospíšek Martin Pospíšek (Gar.)	Z,ZK	6	3P+1C	L	PS

#### Number of semester: 3

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
BMPROJ6	Diploma Project  Vratislav Fabián, Jan Kybic, Roman mejla, Petr Pošík Petr Pošík Roman meila (Gar.)	Z	6	0p+6s	Z,L	Р

2018_MBIOPPV1	Povinn volitelné p edm ty BAM31ADA,B2M31AEDA, (see the list of groups below)	Min. cours. 4 Max. cours. 4	Min/Max 24/24		PV
2018_MBIOVOL	Volitelné odborné p edm ty	Min. cours.	Min/Max 0/999		V

#### Number of semester: 4

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
BDIP30	Diploma Thesis	Z	30	22s	L	Р

### List of groups of courses of this pass with the complete content of members of individual groups

Kód		Name of the group o group (for specificati	f courses and on see here o	codes of members of this below the list of courses)	Com	pletion	Credits	Scope	Semester	Role
					Min.	cours.				
0040 140	10DD\/4			_		4	Min/Max	x		
2018_MB	IOPPV1	Povi	nn volitelné	p edm ty	Max	cours.	24/24			PV
						4				
BAM31ADA	Adaptive s	ignal processing	B2M31AEDA	Experimental Data Analysis	!	BAM17E	PM A	pplications o	f Electromagne	etic
BAM31AOL	Applied op	toelectronics in medic	BAM02BIO	Biosensors		BAM02F	PT P	hysics for Dia	agnostics and	Ther
B0M37FAV	Physiology	and modeling of heari	B3M33HRO	Humanoid robots		B4B01JA	NG L	anguages, A	utomats and G	ramatic
B2M37KASA	Compress	ion of images and signal	BAM38KLS	Construction of Medical Systems		B4M33M	PV C	omputer Visi	on Methods	
B2M37MAM	Microproce	essors	BAM31MOA	Modeling and analysis of brain a		B2M37M	OTA A	dvanced are	as in image an	d vide
B3M38MSE	Modern Se	ensors	B2M34ZETA	Custom Electronics Design		BAM31N	PG N	europhysiolo	gy	
BAM33NIN	Neuroinfor	matics	B2M17OPM	Optical Measurements		B2M31D	SP A	dvanced DS	P methods	
B2M37SSPA	Statistical	Signal Processing	B4M36SMU	Symbolic Machine Learning		BAM17E	MC Ir	troduction to	electromagne	tic
BAM31ZAS	Analog Sig	nal Processing	BAM33ZMO	Medical Image Processing						
2018 MBIOVOL Voli		elné odborné	p edm tv	Min.	cours.	Min/Ma	x		v	
			onio oabonio	p cam ty		0	0/999			

2018 MBIOVOL	Malifestra for all some for a start to	Min. cours.	Min/Max		,	
2018_MBIOVOL	Volitelné odborné p edm ty	0	0/999		V	

### List of courses of this pass:

Code	Name of the course	Completion	Credits			
B0M37FAV	Physiology and modeling of hearing and vision	Z,ZK	6			
The primary aim of	The primary aim of the course is to study the physiology of sensors and processes of perception of audio and visual information by human subjects as two					

communication channels, i.e., Human Auditory System (HAS) and Human Visual System (HVS). The course summarizes current knowledge in the field of human vision and hearing physiology and, at the same time, presents their description using mathematical models using the latest computational tools and procedures, including Machine Learning (ML), Deep Learning (DL) and Artificial Intelligence (Al). Emphasis is also placed on current and prospective applications of the mentioned knowledge. The main application area is the audiovisual technology related to human perception, but the direct employment of the acquired knowledge also includes the areas of multimedia technology, control systems, automation, robotics, safety and security technology, bioinspired systems, etc. At the same time, students gain a general overview of information processing in biological systems. A separate part is the objectification of audiovisual information perceived quality, i.e., Quality of Experience (QoE). The course is intended for students of master's degree in technical fields. The exercises will be devoted to fundamental experiments to determine the most important characteristics of HAS and HVS, including computational models and simulation of vision and hearing

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B2M17OPM	Optical Measurements	Z,ZK	6
B2M31AEDA	Experimental Data Analysis	Z,ZK	6

In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation and interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of semestral project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to teach students to use critical thinking and to acquire additional knowledge in solution of practical tasks.

ı	B2M31DSP	Advanced DSP methods	Z,ZK	6
1	The	the best course to stand our continuous links during a discussion of each stand of such distribution of according to the continuous		1-14-1 -1-4

The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital signals analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familiar with

11/11/12/14/15 1A	analyses.  Custom Electronics Design	KZ	6
B2M34ZETA The course deals	with the design methodology of advanced custom electronics. The aim is to convert theoretical knowledge of previous studies into sp		1
	nt are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on re		-
	and production, showing the latest technological trends and component base.		
B2M37KASA		Z,ZK	6
=	with compression methods and techniques. Main goal is to introduce basic concepts of lossless and lossy compresion of audiovisual info		
	Within the laboratory exercises students will work with implementations of particular algorithms, including objective and subjective me		
32M37MAM	Microprocessors	Z,ZK	6
	students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect externate tation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C	-	
=	letion of this subject student should be able to design and implement simpler microprocessor system including connection of necessa		
	design.		
32M37MOTA	Advanced areas in image and video technology	Z,ZK	6
	es on the state-of-the-art techniques for digital image and video technology. These techniques and their applications cover almost all a		-
-	an interaction. A significant part of the course is focused on the methods of image signal processing and main hardware and software		
aging systems.	he aim of the laboratory exercises is to familiarize with advanced methods for capturing, processing and reproduction of image information in this area, the content of the lectures and exercises is being continuously updated.	ation. Due to the	asi progre
32M37SSPA	Statistical Signal Processing	Z,ZK	6
	es fundamentals in three main domains of the statistical signal processing: 1) estimation theory, 2) detection theory, 3) optimal and ad		_
-	s a core theory with many applications ranging from digital communications, audio and video processing, radar and radio navigation, i		
	evaluation, etc.		
B3M33HRO	Humanoid robots	Z,ZK	6
	es on human-centered robotics: humanoid robots and human-robot interaction. Motivated by the vision of robot companions in our house		
	chnology and its specific challenges and opportunities: (i) design, kinematics and inverse kinematics of humanoids, (ii) multimodal set	-	
ertiai sensing, et	, (iii) walking and balancing, and (ii) grasping. The second part of the course centers on human-robot interaction (HRI), which includes collaborative robots) and cognitive/social HRI - how to design robots and behaviors to be acceptable for people.	s pnysicai HRI (sa	iety aspec
B3M38MSE	Modern Sensors	Z,ZK	6
DOMOGINIOL	An overview of sensors of physical quantities used in industry and in research and methods of signal processing.	۷,۷۱۲	0
B4B01JAG	Languages, Automats and Gramatics	Z.ZK	6
	theory of finite automata and grammars: deterministic and non deterministic finite automata, languages accepted by finite automata, re	,	1
	and languages generated by grammars with emphasis to context free grammars. A very brief introduction of Turing machine	S.	
B4M33MPV	Computer Vision Methods	Z,ZK	6
	selected computer vision problems: search for correspondences between images via interest point detection, description and matchin		-
-	I segmentation of objects in images and videos, image retrieval from large databases and tracking of objects in video sequences. This	· ·	
nter-university p	ogramme prg.ai Minor. It pools the best of AI education in Prague to provide students with a deeper and broader insight into the field	of artificial intellig	ence. More
B4M33PAL	information is available at https://prg.ai/minor.	Z,ZK	6
	Advanced algorithms graph algorithms and graph representation. Combinatorial algorithms. Application of formal languages theory in computer science - p	•	0
B4M35KO	Combinatorial Optimization	Z,ZK	6
	the problems and algorithms of combinatorial optimization (often called discrete optimization; there is a strong overlap with the term of	,	
the courses on I	near algebra, graph theory, and basics of optimization, we show optimization techniques based on graphs, integer linear programming	g, heuristics, app	roximation
algorithms and s	tate space search methods. We focus on application of optimization in stores, ground transportation, flight transportation, logistics, pla	anning of human	resources,
	scheduling in production lines, message routing, scheduling in parallel computers.		1
B4M36MBG	Molecular Biology and Genetics	Z,ZK	6
B4M36SAN	Statistical Data Analysis	Z,ZK	6
	on the skills developed in introductory statistics courses. It is practically oriented and gives an introduction to applied statistics. It mainly		
	lling, i.e., the methods that help to understand, interpret, visualize and model potentially high-dimensional data. It can be seen as a p	urely statistical co	ounterpart
	machine learning and data mining courses		
nalysis and mode	machine learning and data mining courses.	7 7K	6
nalysis and mode	Symbolic Machine Learning	Z,ZK	6 known as
nalysis and mode B4M36SMU This course con	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its e	environment, also	known as
B4M36SMU This course con	Symbolic Machine Learning	environment, also nce. The third part	known as will cover
B4M36SMU This course con	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferen	environment, also nce. The third part	known as will cover
B4M36SMU This course con reinforcement lefundamental top	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally,	environment, also nce. The third part	known as will cover
B4M36SMU This course con reinforcement le fundamental top	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferencs from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.	environment, also ace. The third part the last part will	known as will cover provide an
B4M36SMU This course con reinforcement le fundamental top  BAM02BIO BAM02FPT this course, stud	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.  Biosensors  Physics for Diagnostics and Therapy ents will be introduced to the problems of locomotive organs diseases and musculoskeletal pain in the first seven lectures. Great space is	environment, also nce. The third part the last part will Z,ZK Z,ZK s devoted to electr	known as will cover provide an 6 6 cotherapeut
B4M36SMU This course con reinforcement le fundamental top  BAM02BIO BAM02FPT this course, stud methods, therap	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.  Biosensors  Physics for Diagnostics and Therapy ents will be introduced to the problems of locomotive organs diseases and musculoskeletal pain in the first seven lectures. Great space is eutic ultrasound and phototherapy. Furthermore, advanced neurorehabilitation methods, especially transcranial brain stimulation methods.	environment, also nee. The third part the last part will Z,ZK Z,ZK s devoted to electronds (repetitive transporter)	known as will cover provide an 6 cotherapeut anscranial
B4M36SMU This course con reinforcement le fundamental top  BAM02BIO BAM02FPT this course, stud methods, therap agnetic stimulatie	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.  Biosensors  Physics for Diagnostics and Therapy ents will be introduced to the problems of locomotive organs diseases and musculoskeletal pain in the first seven lectures. Great space is eutic ultrasound and phototherapy. Furthermore, advanced neurorehabilitation methods, especially transcranial brain stimulation methon of the brain - rTMS, transcranial electrical stimulation of the brain - tDCS and electroconvulsive therapy - ECT) are discussed. In the	environment, also ace. The third part the last part will Z,ZK Z,ZK s devoted to electrods (repetitive tree second half of the	known as will cover provide an  6 6 otherapeur anscranial
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B4M36SMU This course con reinforcement le fundamental top BAM02BIO BAM02FPT this course, stud methods, therap agnetic stimulatie atten BAM17EMC	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.  Biosensors  Physics for Diagnostics and Therapy ents will be introduced to the problems of locomotive organs diseases and musculoskeletal pain in the first seven lectures. Great space is entire ultrasound and phototherapy. Furthermore, advanced neurorehabilitation methods, especially transcranial brain stimulation methors of the brain - rTMS, transcranial electrical stimulation of the brain - tDCS and electroconvulsive therapy - ECT) are discussed. In the tion is paid to the possibilities of using ionizing electromagnetic fields in medical diagnostics and therapy (eg X-ray, proton therapy, race introduction to electromagnetic compatibility	environment, also nee. The third part the last part will Z,ZK Z,ZK s devoted to electrods (repetitive tree second half of the diotherapy, etc.).  Z,ZK	known as will cover provide an 6 6 otherapeut anscranial the semester 6
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BAM02BIO BAM02FPT this course, stud methods, therap agnetic stimulatin atten BAM17EMC The subject dwe BAM17EPM me major aim of the medicine. Safet	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.  Biosensors  Physics for Diagnostics and Therapy ents will be introduced to the problems of locomotive organs diseases and musculoskeletal pain in the first seven lectures. Great space is eutic ultrasound and phototherapy. Furthermore, advanced neurorehabilitation methods, especially transcranial brain stimulation methor of the brain - rTMS, transcranial electrical stimulation of the brain - tDCS and electroconvulsive therapy - ECT) are discussed. In the tion is paid to the possibilities of using ionizing electromagnetic fields in medical diagnostics and therapy (eg X-ray, proton therapy, race)  Introduction to electromagnetic compatibility  Its on problems of electromagnetic compatibility. Students obtain the basic knowledges in the field of electromagnetic compatibility - electromagnetic stop give to students a basic overview of biophysical aspects of EM fields in Medicine  ese lectures is to give to students a basic overview of biophysical aspects of EM fields in different biological systems, including an overview of mobile phone users, magnetic resonance imaging, interaction of optical radiation with biological tissue.	z,ZK z,ZK s devoted to electrone es second half of the diotherapy, etc.). z,ZK lectromagnetic in: z,ZK z,ZK s devoted to electrone es second half of the diotherapy, etc.). z,ZK lectromagnetic in: z,ZK	known as will cover provide an 6 6 cotherapeuranscranial he semeste 6 terference, 6 application M exposur
BAM02BIO BAM02FPT This course, stud methods, therap agnetic stimulatin atten BAM17EM BAM17EPM the major aim of the	Symbolic Machine Learning sists of four parts. The first part of the course will explain methods through which an intelligent agent can learn by interacting with its earning. This will include deep reinforcement learning. The second part focuses on Bayesian networks, specifically methods for inferences from natural language learning, starting from the basics and ending with state-of-the-art architectures such as transformer. Finally, introduction to several topics from the computational learning theory, including the online and batch learning settings.  Biosensors  Physics for Diagnostics and Therapy ents will be introduced to the problems of locomotive organs diseases and musculoskeletal pain in the first seven lectures. Great space is eutic ultrasound and phototherapy. Furthermore, advanced neurorehabilitation methods, especially transcranial brain stimulation methor of the brain - rTMS, transcranial electrical stimulation of the brain - tDCS and electroconvulsive therapy - ECT) are discussed. In the tion is paid to the possibilities of using ionizing electromagnetic fields in medical diagnostics and therapy (eg X-ray, proton therapy, race in the possibilities of using ionizing electromagnetic fields in medical diagnostics and therapy (eg X-ray, proton therapy, race in the possibility of the possibility. Students obtain the basic knowledges in the field of electromagnetic compatibility. Introduction to electromagnetic compatibility.  Susceptibility and testing methods. The subject leads to gain professional skills in the field of electrical engineering.  Applications of Electromagnetic Fields in Medicine ese lectures is to give to students a basic overview of biophysical aspects of EM fields in different biological systems, including an overvent of mobile phone users, magnetic resonance imaging, interaction of optical radiation with biological tissue.  Adaptive signal processing	z,ZK z,ZK s devoted to electrodictherapy, etc.). Z,ZK lectromagnetic in:  Z,ZK state of the second half of t	known as will cover provide an 6 6 cotherapeut anscranial he semeste 6 terference,
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BAM31BSG	Biological signals	Z,ZK	6
BAM31LET	Medical Instrumentation and Devices	Z,ZK	6
Students will study	fundamental principles applied within the modern medical devices and systems, esp. from the point of view of functional blocks and ele	ectronic circuits of	diagnostical
and therapeutica	al medical equipments including electrocardiographs, electroencephalographs, bedside and central monitors, equipments for anestes	iology, intensive a	nd critical
healthcare, equip	ments for clinical laboratory, electrostimulators, cardiostimulators and defibrilators, blood pressure and flow measurement (including	dilution) and pulse	e oxymetry.
BAM31MOA	Modeling and analysis of brain activity	Z,ZK	6
BAM31NPG	Neurophysiology	Z,ZK	6
BAM31ZAS	Analog Signal Processing	Z,ZK	6
The course deals w	ith analog input-output blocks for signal transmission and processing. They discussed circuit solution of amplifiers and filters, including the	heir design proces	s, simulation
	at. Students learn the circuit concepts and possibilities for solving the contemporary analogue structures. The second part of the cour		-
implementa	ation of analog filters, including discrete-time circuits. The conclusion is devoted to the possibilities of computer optimization of electrons.	nic circuits and fil	ters.
BAM33NIN	Neuroinformatics	Z,ZK	6
The Neuroinformati	cs Course concentrates on modelling of neurons, stochastic learning on cellular level, information coding and decoding in brain and sir	•	g. Examples
	from clinical practices are provided throughout the course. The labs focus on signal neuron analysis from human and animal b	rain.	
BAM33ZMO	Medical Image Processing	Z,ZK	6
This course cover	s the most used advanced image analysis methods, with emphasis on images from medical and biological modalities, from microsco	py, to ultrasound,	MRI, or CT,
	including time sequences.		
BAM33ZSL	Medical Imaging Systems	Z,ZK	6
	the principles, design and properties of currently used medical imaging devices. We shall deal with 2D microscopic, X-ray and ultrasou		
advanced topics su	ch as Doppler ultrasound. We will also study tomographic (3D) imaging systems: computed tomography (CT), magnetic resonance ima	ging (MRI) includi	ng functional
	MRI (fMRI) and nuclear imaging methods (PET,SPECT). For more information see https://cw.fel.cvut.cz/wiki/courses/zsl		T
BAM36BIN	Bioinformatics	Z,ZK	6
BAM38KLS	Construction of Medical Systems	Z,ZK	6
BDIP30	Diploma Thesis	Z	30
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 h	ner branch of stud	y, 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 comprehensial transfer of the properties of the comprehensial transfer of the properties of the propertie	ensive final exami	nation.
BE4M33SSU	Statistical Machine Learning	Z,ZK	6
The aim of statisti	cal machine learning is to develop systems (models and algorithms) for learning to solve tasks given a set of examples and some pri	or knowledge abo	ut the task.
This includes typic	al tasks in speech and image recognition. The course has the following two main objectives 1. to present fundamental learning conce	pts such as risk n	ninimisation,
maximum likelihood	d estimation and Bayesian learning including their theoretical aspects, 2. to consider important state-of-the-art models for classification	on and regression	and to show
	how they can be learned by those concepts.		
BEZM	Safety in Electrical Engineering for a master's degree	Z	0
The course provi	des for students of all programs periodic training guidelines for health and occupational safety and gives knowledge of electrical haza	ard of given branc	h of study.
	Students receive indispensable qualification according to the current Directive of the Dean.		
BMPROJ6	Diploma Project	Z	6

For updated information see <a href="http://bilakniha.cvut.cz/en/f3.html">http://bilakniha.cvut.cz/en/f3.html</a> Generated: day 2025-11-09, time 22:43.