Study plan

Name of study plan: Open Informatics - Computer Science 2016

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Welcome page Type of study: unknown full-time Required credits: 152 Elective courses credits: 28 Sum of credits in the plan: 180 Note on the plan:

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 122 The role of the block: P

Code of the group: 2015_BOIAPP Name of the group: Subjects in english Requirement credits in the group: Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 0

Note on the group:

Note on the gro	Sup.					
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
BE4B33SEA	Subject in english - abroad Petr Pošík Petr Pošík Petr Pošík (Gar.)	Z,ZK	0		Z,L	Р
BE5B32PKS	Computer and Communication Networks Pavel Bezpalec Pavel Bezpalec	Z,ZK	6	2P + 2C	Z	Ρ
BE5B35APO	Computer Architectures Pavel Píša, Richard Šusta Pavel Píša Pavel Píša (Gar.)	Z,ZK	6	2P+2L	L	Ρ
BE4B38PSIA	Computer Networks Ji í Novák, Jan Holub Ji í Novák Ji í Novák (Gar.)	Z,ZK	5	2P+2L	L	Ρ
BE4B36FUP	Functional Programming Rostislav Hor ík, Tomáš Votroubek Rostislav Hor ík Michal P chou ek (Gar.)	Z,ZK	6	2P+2C	L	Ρ
BE4B36ZUI	Introduction to Artificial Intelligence Branislav Bošanský, Viliam Lisý Branislav Bošanský Branislav Bošanský (Gar.)	Z,ZK	6	2P+2C	L	Ρ
BE5B35LSP	Logic Systems and Processors Richard Šusta, Martin Hlinovský Martin Hlinovský Richard Šusta (Gar.)	Z,ZK	6	3P+2L	Z	Ρ
BE5B33RPZ	Pattern Recognition and Machine Learning Ond ej Drbohlav, Ji í Matas, Jan Šochman Jan Šochman Ji í Matas (Gar.)	Z,ZK	6	2P+2C	Z	Р
BE4B35PSR	Real-time Systems Programming Michal Sojka Michal Sojka Michal Sojka (Gar.)	Z,ZK	6	2P+2C	Z	Р
BE4B39VGO	Creating graphic content Ladislav molík Ladislav molík (Gar.)	Z,ZK	6	2P+2C+8C	Z	Ρ

Characteristics of the courses of this group of Study Plan: Code=2015_BOIAPP Name=Subjects in english

BE4B33SEA	Subject in english - abroad	Z,ZK	0				
The subject serves for v							
BE5B32PKS	Computer and Communication Networks	Z,ZK	6				
The aim of the course is	s to familiarize students with current trends in the switched local networks and the key functions of routing protocols in IP net	works. The course	is aimed rather				
primarily practically ther	n theoretically.						
BE5B35APO	Computer Architectures	Z,ZK	6				
Subject provides overvi	ew of basic building blocks of computer systems. Explanation starts from hardware side where it extends knowledge present	ed in the previous	lectures of				
Structures of computer	systems. Topics cover building blocks description, CPU structure, multiple processors interconnections, input/output subsyste	em and basic over	rview of network				
and buses topologies. Emphasis is placed on clarification of interconnection of hardware components with software support, mainly lower levels of operating systems, device drivers							
and virtualization techniques. General principles are more elaborated during presentation of examples of multiple standard CPU architectures. Exercises are more focused on the							
software view to the cor	trary. Students are lead from basic programming on CPU level to the interaction with raw hardware.						

	omputer Networks	Z,ZK	5
	oles and technologies of Computer Networks. Physical layer media, analog and digital modulations, network topologies, N		
	s, coding and cryptography basics are introduced. Widely used LAN technologies are then presented together with their fe	eatures. Internet	protocols are
<u> </u>	ng approaches are presented.		1
	Inctional Programming	Z,ZK	6
	ents into the techniques of functional programming, the advantages and disadvantages of this programming paradigm, and	•	
	hat the programmer symbolically describes the problem to be solved, rather than specifying the exact sequence of operat	-	
-	the solved problem and implementing even more complex algorithms compactly. Functional programming has notable ad		
	gorithms, and the most useful functional programming concepts are increasingly often introduced to standard programming In symbols, rather than numbers, functional programming has been heavily used in in artificial intelligence fields, such as ac	, , ,	
	part of the inter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students with a		
-	nce. More information is available at https://prg.ai/minor.		
	troduction to Artificial Intelligence	Z.ZK	6
	cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space set	,	-
	nowledge using formal logic, methods of automated reasoning, and an introduction to Markov decision making, and to two		
	sity programme prg.ai Minor. It pools the best of AI education in Prague to provide students with a deeper and broader ins	1 7 8	
	on is available at https://prg.ai/minor.	3	
BE5B35LSP Lo	ogic Systems and Processors	Z.ZK	6
	basic hardware structures of computing resources, their design, and architecture. It provides an overview of the possibilitie	es of performing	data operations
at the hardware level and the	e design of embedded processor systems with peripherals on modern FPGA programmable logic circuits, which are increas	singly widely used	d today. Students
will learn their description in	VHDL, from logic to more complex sequential circuits to practical finite state machine (FSM) designs. They will also mas	ter the correct de	sign procedure
using circuit simulation. Pra	ctical problems are solved using development boards used at hundreds of leading universities around the world. The court	rse ends with RIS	C-V processor
structure, cache, and pipelin	ne processing.		
BE5B33RPZ Pa	attern Recognition and Machine Learning	Z,ZK	6
The basic formulations of th	e statistical decision problem are presented. The necessary knowledge about the (statistical) relationship between obser	vations and class	es of objects is
	raining set. The course covers both well-established and advanced classifier learning methods, as Perceptron, AdaBoost		
	also part of the inter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students with	th a deeper and	oroader insight
	Iligence. More information is available at https://prg.ai/minor.		
	eal-time Systems Programming	Z,ZK	6
	provide students with basic knowledge about software development for real-time systems, for example in control and em		
	ms equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have		e e
	ist solve a few simple tasks to familiarize them with basic components of VxWorks RTOS and to benchmark the used OS	•	
	the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, student		•
	application which will require full utilization of RTOS features. All the tasks at the labs will be implemented in C (or C++) la		
	reating graphic content	Z,ZK	6
	provide theory behind geometric modeling and modeling of materials, give students an overview of methods used in the	,	-
	hose methods in praxis. At the seminars, students will learn how to design and create three-dimensional scene, create and		-
	(y) and geometrical details, and position and set-up lights in the scene.		U U
Code of the grou	p: 2015_BOIBAP		
•	up: Bachelor Project		
Requirement cre	dits in the group: In this group you have to gain 20 credits		
Requirement cou	urses in the group: In this group you have to complete 1 course		
Credits in the gro	pup: 20		
Note on the grou			
	Name of the course / Name of the group of courses		

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	
BBAP20	Bachelor thesis Roman mejla Roman mejla (Gar.)	Z	20	12S	L,Z	Р	

Characteristics of the courses of this group of Study Plan: Code=2015_BOIBAP Name=Bachelor Project

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BBAP20	Bachelor thesis	Z	20

Code of the group: 2015_BOIBBE Name of the group: Safety of the bachelor's studies Requirement credits in the group: Requirement courses in the group: In this group you have to complete at least 2 courses 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
BEZB	Safety in Electrical Engineering for a Bachelor's Degree Ivana Nová, Radek Havlí ek, Vladimír K la Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	Z,L	Р
BEZZ	Basic Health and Occupational Safety Regulations Ivana Nová, Radek Havlí ek, Vladimír K la Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	z	Р

Characteristics of the courses of this group of Study Plan: Code=2015_BOIBBE Name=Safety of the bachelor's studies

 BEZB
 Safety in Electrical Engineering for a Bachelor's Degree
 Z
 0

 The purpose of the safety course is to give the students basic knowledge of electrical equipment and installation as to avoid danger arising from operation of it. This introductory course contains fundamentals of Safety Electrical Engineering. In this way the students receive qualification of instructed person that enables them to work on electrical equipment.

 BEZZ
 Basic Health and Occupational Safety Regulations
 Z
 0

 The guidelines were worked out based on The Training Scheme for Health and Occupational Safety designed for employees and students of the Czech Technical University in Prague, which was provided by the Rector's Office of the CTU. Safety is considered one of the basic duties of all employees and students. The knowledge of Health and Occupational Safety regulations forms an integral and permanent part of qualification requirements. This program is obligatory.

Code of the group: 2015_BOIH

Name of the group: Humanities subjects

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
B0B16ET1	Ethic 1 Vladimír Sláme ka Vladimír Sláme ka Vladimír Sláme ka (Gar.)	KZ	4	2P+2C	Z	Р
B0B16FIL	Philosophy Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	ZK	2	2P+0S	Z,L	Р
B0B16FI1	Philosophy 1 Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	KZ	4	2P+2S	Z	Р
B0B16HTE	History of technology and economic Marcela Efmertová, Jan Mikeš Marcela Efmertová Marcela Efmertová (Gar.)	ZK	2	2P+0S	Z,L	Р
B0B16HT1	History of science and technology 1 Marcela Efmertová, Jan Mikeš Marcela Efmertová Marcela Efmertová (Gar.)	KZ	4	2P+2S	Z	Р
B0B16HI1	History 1 Milena Josefovi ová Milena Josefovi ová Milena Josefovi ová (Gar.)	KZ	4	2P+2S	Z	Р
B0B16MPS	Psychology Jan Fiala Jan Fiala Jan Fiala (Gar.)	Z,ZK	4	2P+2S	Z,L	Р
B0B16MPL	Psychology for managers Jan Fiala Jan Fiala Jan Fiala (Gar.)	ZK	2	2P+0S	Z,L	Р
A003TV	Physical Education <i>Ji í Drnek</i>	Z	2	0+2	L,Z	Р

Characteristics of the courses of this group of Study Plan: Code=2015_BOIH Name=Humanities subjects

B0B16ET1	Ethic 1	KZ	4		
Aim of this subject is to	situations of hum	an life. Essential			
parts of the subject are discussions in which students can react to lectures but also to actual questions coming with news and look for the communal answers.					
B0B16FIL	Philosophy	ZK	2		
We deal with the most i	mportant persons, schools and ideas of ancient philosophy. We are concerned especially on transdisciplinary nature of philo	, sophy and conned	ction of old		
philosophical thoughts v	with recent problems of science, technology, economics and politics.				
B0B16FI1	Philosophy 1	KZ	4		
We deal with the most i	mportant persons, schools and ideas of ancient philosophy. We are concerned especially on transdisciplinary nature of philo	sophy and conned	ction of old		
philosophical thoughts	with recent problems of science, technology, economics and politics.				
B0B16HTE	History of technology and economic	ZK	2		
B0B16HT1	History of science and technology 1	KZ	4		
B0B16HI1	History 1	KZ	4		
B0B16MPS	Psychology	Z,ZK	4		
B0B16MPL	Psychology for managers	ZK	2		
A003TV	Physical Education	Z	2		

Code of the group: 2015_BOIP

Name of the group: Compulsory subjects of the programme

Requirement credits in the group: In this group you have to gain 102 credits

Requirement courses in the group: In this group you have to complete 17 courses Credits in the group: 102 Note on the group:

	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their	Completion	Credits	Scope	Semester	Role
0000	members)	Completion	oreand	Coope	Comodel	
	Tutors, authors and guarantors (gar.)					
B4B33ALG	Algorithms Marko Genyk-Berezovskyj, Daniel Pr ša Daniel Pr ša Marko Genyk-Berezovskyj (Gar.)	Z,ZK	6	2P+2C	z	Ρ
30B35APO	Computer Architectures	Z,ZK	5	2P+2L	L	Р
30B36DBS	Pavel Píša, Richard Šusta, Petr Št pán Pavel Píša Pavel Píša (Gar.) Database Systems	Z,ZK	6	2P+2C+4E) L	Р
B4B01DMA	Martin imná, Václav Kratochvíl Martin imná Martin imná (Gar.) Discrete Mathematics	Z,ZK	5	2P+2S	z	Р
B0B01LAG	Petr Habala Petr Habala Petr Habala (Gar.) Linear Algebra Ji í Velebil, Jakub Rondoš, Natalie Žukovec, Daniel Gromada, Josef Dvo ák, Mat j Dostál Ji í Velebil Ji í Velebil (Gar.)	Z,ZK	8	4P+2S	z	Р
B0B01LGR	Natalie Žukovec, Mat j Dostál, Alena Gollová Alena Gollová Marie Demlová (Gar.)	Z,ZK	5	3P+2S	Z,L	Ρ
B0B01MA1	Mathematical Analysis 1 Josef Dvo ák, Martin K epela, Josef Tkadlec, Veronika Sobotíková Josef Tkadlec Josef Tkadlec (Gar.)	Z,ZK	7	4P+2S	Z,L	Ρ
B0B01MA2	Mathematical Analysis 2 Miroslav Korbelá, Petr Hájek, Martin Bohata, Jaroslav Tišer, Karel Pospíšil, Paola Vivi, Hana Tur inová Petr Hájek Jaroslav Tišer (Gar.)	Z,ZK	7	4P+2S	L,Z	Р
B4B35OSY	Operating Systems Michal Sojka, Petr Št pán Michal Sojka Michal Sojka (Gar.)	Z,ZK	4	2P+2C	Z	Ρ
B0B33OPT	Optimization Tomáš Werner, Petr Olšák, Mirko Navara, Tomáš Kroupa Tomáš Werner Tomáš Werner (Gar.)	Z,ZK	7	4P+2C	Z,L	Р
B4B36PDV	Parallel and Distributed Computing Mat j Kafka, Michal Jakob Michal Jakob Michal Jakob (Gar.)	Z,ZK	6	2P+2C	L	Р
34B38PSIA	Computer Networks Ji í Novák, Jan Holub Ji í Novák Ji í Novák (Gar.)	Z,ZK	5	2P+2L	L	Ρ
B0B01PST	Probability and Statistics Kate ina Helisová Kate ina Helisová Petr Hájek (Gar.)	Z,ZK	7	4P+2S	Z	Р
B0B36PRP	Procedural Programming Jan Faigl Jan Faigl Jan Faigl (Gar.)	Z,ZK	6	2P+2C	Z	Ρ
B0B36PJV	Programming in Java Ji í Vok ínek, Martin Mudroch, Ladislav Serédi Ji í Vok ínek Ji í Vok ínek (Gar.)	Z,ZK	6	2P+3C+7E	L	Р
B4B33RPH	Solving Problems and other Games Petr Pošík, Tomáš Svoboda Petr Pošík Tomáš Svoboda (Gar.)	KZ	6	2P+3C	Z	Р
B4BPROJ6	Unassisted project Petr Pošík, Tomáš Svoboda, Ji í Šebek, Jaroslav Sloup, Ivan Jelínek, Katarína Žmolíková Petr Pošík	Z	6	0+2	Z,L	Ρ
haracteristics of	the courses of this group of Study Plan: Code=2015_BOIP Name	=Compulsory	/ subject	s of the	programme	e
B4B33ALG	Algorithms			Z	Z,ZK	6
n the course, the algorit	hms development is constructed with minimum dependency to programming language; ne	vertheless the lea	tures and s	eminars are	based on Java	a. Basic d
	basic algorithms, recursive functions, abstract data types, stack, queues, trees, searching,	, sorting, special a	application a	algorithms, [Dynamic progra	amming.
	ign and construct non-trivial algorithms and to evaluate their effectivity.				7 71/	
	Computer Architectures				Z,ZK	5
	Database Systems as a basic database course mainly aimed at the student ability to design a relational data	model and to use	the SOL lar		Z,ZK	6 is well as
-	bose the appropriate degree of transaction isolation. Students will also get acquainted with					
	anagement. They will verify their knowledge during the elaboration of a continuously subm		-	g		
I	Discrete Mathematics				Z,ZK	5
1	neet some important topics from the field of discrete mathematics. Namely, they will explore	divisibility and ca	Iculations m			
	dinality of sets, induction, and recurrence equations. The second aim of this course is to te tem to mathematics as science.	each students the	language of	f mathemati	cs, both passiv	ely and
B0B01LAG	Linear Algebra			1	Z,ZK	8
	tial parts of linear algebra. Firstly, the basic notions of a linear space and linear mappings ar- rices (determinants, inverse matrices, matrices of a linear map, eigenvalues and eigenvec					
	equations, the geometry of a 3D space (including the scalar product and the vector product		1011, 6(0) 18 (
	Logic and Graphs	,			Z,ZK	5
	s of mathematical logic and graph theory. Syntax and semantics of propositional and predica	ate logic are introd	uced. The in			
	etween a formula and its model is stressed. Further, basic notions from graph theory are in	-				1
	Mathematical Analysis 1			-	7 71/	7

Z,ZK

7

B0B01MA1

Mathematical Analysis 1

The aim of the course is to introduce students to basics of differential and integral calculus of functions of one variable.

30B01MA2	Mathematical Analysis 2	Z,ZK	7
The subject covers a	n introduction to the differential and integral calculus in several variables and basic relations between curve and surface integral		ains function
eries and power ser	ies with application to Taylor and Fourier series.		
B4B35OSY	Operating Systems	Z,ZK	4
ecture introduces o	peration system's basic concepts and principles as processes, threads, communication and synchronization, virtual memory, dr	ivers, file systems	, basic securit
spects. These topics	are theoretically described and demonstrated on Linux and Windows OS with multi-core systems. Practical exercises from OS	in C programmin	g language wi
e solved on labs. St	udents will work with Linux OS and micro-kernel NOVA.		
30B33OPT	Optimization	Z,ZK	7
he course provides	an introduction to mathematical optimization, specifically to optimization in real vector spaces of finite dimension. The theory is illus	strated with a num	ber of example
ou will refresh and e	xtend many topics that you know from linear algebra and calculus courses.		
B4B36PDV	Parallel and Distributed Computing	Z,ZK	6
34B38PSIA	Computer Networks	Z,ZK	5
B0B01PST	Probability and Statistics	Z,ZK	7
		Z.ZK	6
30B36PRP	Procedular Prodrammind		
he course accompa re developed. Stude rograms. At the sam s used that provides nd linking but also w	Procedural Programming nies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data stru- nts master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cru- e time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality is is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a	ictures and proces eating readable a fore, the C prograi not only with prog y and accuracy of	nd reusable nming langua ram compilati implementatio
The course accompa are developed. Stude orograms. At the sam s used that provides and linking but also w Student independent mplementations. Eve	nies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structures master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cructure time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a luation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks.	ctures and procest eating readable a fore, the C program not only with program y and accuracy of a larger program u	nd reusable nming langua ram compilati implementation sing existing
The course accomparate developed. Stude orograms. At the same is used that provides and linking but also w Student independence mplementations. Eva B0B36PJV	nies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structures master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cree time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality are is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a luation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks Programming in Java	ictures and process eating readable a fore, the C program not only with program y and accuracy of a larger program u s. Z,ZK	nd reusable nming langua ram compilati implementations sing existing 6
The course accompa- re developed. Stude rograms. At the sam is used that provides and linking but also w Student independence mplementations. Eva 30B36PJV The course builds on	nie's basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structures master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cree time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality is is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a luation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks Programming in Java the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course	ictures and process eating readable a fore, the C program not only with program y and accuracy of a larger program u s. Z,ZK e also focus on the	nd reusable nming langua iram compilati implementatio sing existing 6 e object conce
The course accompare developed. Stude rograms. At the same s used that provides ind linking but also we Student independence applementations. Eva BOB36PJV The course builds on if the Java language	nies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structures master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cree time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality is is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a luation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks Programming in Java the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working	ictures and proces eating readable a fore, the C program not only with prog y and accuracy of a larger program u c. Z,ZK e also focus on the with files and using	nd reusable nming langua rram compilati implementation sing existing 6 e object concor- ng generic typ
The course accompany are developed. Stude orograms. At the sam is used that provides and linking but also w Student independence mplementations. Eva 30B36PJV The course builds on of the Java language vill be introduced. Ar	nie's basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structures master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cree time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality is is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a luation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks Programming in Java the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working important topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and know	ictures and proces eating readable a fore, the C program not only with prog y and accuracy of a larger program u c. Z,ZK e also focus on the with files and using vledge of Java is to	nd reusable mming langua ram compilati implementatic sing existing 6 e object conce ng generic typ ested in the fo
The course accompany are developed. Stude orograms. At the same is used that provides and linking but also w Student independence mplementations. Eva 30B36PJV The course builds on of the Java language will be introduced. Ar of solving partial task	nies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structures master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cree time, the effort is to build students an overview of the program operation, data model, memory access, and management. There a direct link between the program data structures and their representation in the computer memory. Students will get acquainted ith debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality is is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a luation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks Programming in Java the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working important topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and know s and semester work, which will be submitted continuously through the source code version control system. The semester work	ictures and proces eating readable a fore, the C program not only with prog y and accuracy of a larger program u c. Z,ZK e also focus on the with files and using vledge of Java is to	nd reusable mming langua ram compilati implementatic sing existing 6 e object conce ng generic typ ested in the fo
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Name of the group: Exam from the english language

Requirement credits in the group:

Requirement courses in the group: In this group you have to complete 2 courses 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
B0B04B1K	English language B1 - classified assessment Markéta Havli ková, Pavla Péterová, Erik Peter Stadnik, Michael Ynsua, Dana Saláková, Petra Juna Jennings Petra Juna Jennings (Gar.)	κz	0	0C	Z,L	Ρ
B0B04B2Z	English language B2 - exam Markéta Havlí ková, Michael Ynsua, Dana Saláková, Petra Juna Jennings Petra Juna Jennings Petra Juna Jennings (Gar.)	Z,ZK	0	0C	Z,L	Ρ

Characteristics of the courses of this group of Study Plan: Code=2015_BZAJ Name=Exam from the english language

B0B04B1K	English language B1 - classified assessment	KZ	0
verifying of the student			
B0B04B2Z	English language B2 - exam	Z,ZK	0
I) The B2 English Exam	is a compulsory subject for all Faculty of Electrical Engineering students at the Czech Technical University. According to the	Study and Examir	nation Rules and
Regulations for Student	s at CTU (Part III, Article 4), a compulsory subject is one whose completion is a necessary condition in order to successfully	complete the stud	y programme. In
addition, this requires th	e passing of an examination evaluated on the scale A, B, C, D, or E (SERR Part III, Article 6). II) According to the Common E	uropean Framew	ork of Reference
for Languages (CEFR),	an international standard for describing language ability, the definition of an English language learner who has achieved the	B2 (Upper-Interm	nediate) level is
one who can understand	d the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specia	lisation. Can intera	act with a degree
of fluency and spontane	ity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detaile	ed text on a wide r	ange of subjects
and explain a viewpoint	on a topical issue giving the advantages and disadvantages of various options. III) Students who have successfully passed a	an approved inter	national exam
within the past five years	s may present their certificate to the Department of Languages, Faculty of Electrical Engineering. Upon approval, students are	then exempt from	both the Written
Test and the Oral Part.	For a list of approved international exams go the department website: http://jazyky.fel.cvut.cz/		

Name of the block: Compulsory courses of the specialization Minimal number of credits of the block: 30 The role of the block: PO Note on the group:

5 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
B4B36FUP	Functional Programming Rostislav Hor ík, Tomáš Votroubek Rostislav Hor ík Michal P chou ek (Gar.)	Z,ZK	6	2P+2C	L	PO
B4B01JAG	Languages, Automats and Gramatics Marie Demlová, Ji í Demel Marie Demlová Marie Demlová (Gar.)	Z,ZK	6	2P+2S	Z	PO
B4B01NUM	Numerical Analysis Mirko Navara, Aleš N me ek Mirko Navara Mirko Navara (Gar.)	Z,ZK	6	2P+2C	Z	PO
B4B33RPZ	Recognition and Machine Learning Ond ej Drbohlav, Ji í Matas, Jan Šochman Jan Šochman Ji í Matas (Gar.)	Z,ZK	6	2P+2C	Z	PO
B4B36ZUI	Introduction to Artificial Intelligence Branislav Bošanský, Viliam Lisý Branislav Bošanský Michal P chou ek (Gar.)	Z,ZK	6	2P+2C	L	PO

Characteristics of the courses of this group of Study Plan: Code=2015_BOIPO1 Name=Compulsory subjects of the branch

 B4B36FUP
 Functional Programming
 Z,ZK
 6

 This course introduces students into the techniques of functional programming, the advantages and disadvantages of this programming paradigm, and its use in practice. This approach is declarative in the sense that the programmer symbolically describes the problem to be solved, rather than specifying the exact sequence of operations required to solve it. It allows focusing on the essence of the solved problem and implementing even more complex algorithms compactly. Functional programming has notable advantages for parallelization and automated verification of algorithms, and the most useful functional programming concepts are increasingly often introduced to standard programming languages. Because of the focus of functional programming on symbols, rather than numbers, functional programming has been heavily used in in artificial intelligence fields, such as agent systems or symbolic machine learning. This course is also part of the inter-university programme 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 intelligence. More information is available at https://prg.ai/minor.

B4B01JAG	Languages, Automats and Gramatics	Z,ZK	6
Basic notions of the the	ory of finite automata and grammars: deterministic and non deterministic finite automata, languages accepted by finite automat	a, regular express	sions. Grammars
and languages generate	ed by grammars with emphasis to context free grammars. A very brief introduction of Turing machines.		
B4B01NUM	Numerical Analysis	Z,ZK	6
The course introduces t	o basic numerical methods of interpolation and approximation of functions, numerical differentiation and integration, solution	of transcendent e	equations and
systems of linear equat	ions. Emphasis is put on estimation of errors, practical skills with the methods and demonstration of their properties using Ma	aple and compute	r graphics.
B4B33RPZ	Recognition and Machine Learning	Z,ZK	6
The basic formulations	of the statistical decision problem are presented. The necessary knowledge about the (statistical) relationship between observed to be a statistical between observed and the statistical between observed and the statistical between the statistical between observed and th	vations and class	es of objects is
acquired by learning on	the raining set. The course covers both well-established and advanced classifier learning methods, as Perceptron, AdaBoos	t, Support Vector	Machines, and
Neural Nets. This cours	e is also part of the inter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students w	ith a deeper and	oroader insight
into the field of artificial	intelligence. More information is available at https://prg.ai/minor.		
B4B36ZUI	Introduction to Artificial Intelligence	Z,ZK	6
The aim of the course is	s to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space se	arch, problem rep	presentation and
solving, representation	of knowledge using formal logic, methods of automated reasoning, and an introduction to Markov decision making, and to tw	o-player games. 1	his course is
also part of the inter-un	iversity programme prg.ai Minor. It pools the best of AI education in Prague to provide students with a deeper and broader in	sight into the field	of artificial
intelligence. More inform	nation is available at https://prg.ai/minor.		

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

The role of the block: V

Code of the group: 2015_BJKA Name of the group: English language courses 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
B0B04A21	English Language A2-1 Dana Saláková	z		2s	Z	V

B0B04A22	English Language A2-2 Dana Saláková	Z	0	2s	L	V
B0B04B11	English Language B1-1 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	0	2C	Z	V
B0B04B12	English Language B1-2 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	0	2C	L	V
B0B04B21	English Language B2-1 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	3	2C	Z	V
B0B04B22	English Language B2-2 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	3	2C	Z,L	V

Characteristics of the courses of this group of Study Plan: Code=2015_BJKA Name=English language courses

enaraeteriotice er	the boarded of the group of brady fram. boad=2010_Bort (Name=English language board	500	
B0B04A21	English Language A2-1	Z	
The course is open to s	tudents who are beginners in their second language. Course objective: Achieving competence in basic English.		
B0B04A22	English Language A2-2	Z	0
The course is open to s	tudents who are beginners in their second foreign language. The course objective is to develop and sustain their basic knowl	edge of the English	sh language.
B0B04B11	English Language B1-1	Z	0
Course objective: Broad	ening the basic knowledge of general English; mastering basic specialised language; focusing on text analysis and vocabulary	expansion; under	standing spoken
English.			
B0B04B12	English Language B1-2	Z	0
Course objective: Broad	ening the basic knowledge of general English; mastering basic specialised language; focusing on text analysis and vocabulary	expansion; under	standing spoken
English.			
B0B04B21	English Language B2-1	Z	3
This course is designed	as a full-year, two semester preparation course for the universitys compulsory B2-level English Examination (Anglický jazyk	B2 - zkouška - B0	B04B2Z*). While
the course is focused of	n helping students reach a level required to pass the B2-level English Examination (or improve their English for a higher marl	k), it also focuses	more on the
	vocabulary and grammar expected of students at the university level. *NOTE: This exam is also used for determining an approximately approximately and grammar expected of students at the university level. *NOTE: This exam is also used for determining an approximately a	priate level of Eng	lish for Erasmus
/ International Study.			
B0B04B22	English Language B2-2	Z	3
This course is designed	as a full-year, two semester preparation course for the universitys compulsory B2-level English Examination (Anglický jazyk E	32 - zkouška - B0E	304B2Z *). While
the course is focused of	n helping students reach a level required to pass the B2-level English Examination (or improve their English for a higher marl	k), it also focuses	more on the
	vocabulary and grammar expected of students at the university level. *NOTE: This exam is also used for determining an approximately	priate level of Eng	lish for Erasmus
/ International Study.			

Code of the group: BTV

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
TV-V1	Physical education	Z	1	0+2	Z,L	V
TVV0	Physical education	Z	0	0+2	Z,L	V

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

TVV	Physical education	Z	0
TV-V1	Physical education	Z	1
TVV0	Physical education	Z	0

Code of the group: BTVK

Name of the group: Physical education courses

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
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=BTVK Name=Physical education courses

TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

Code of the group: 2015_BOIVOL 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\\

List of courses of this pass:

Code	Name of the course	Completion	Credits
A003TV	Physical Education	Z	2
B0B01LAG	Linear Algebra	Z,ZK	8
	the initial parts of linear algebra. Firstly, the basic notions of a linear space and linear mappings are covered (linear dependence and ind		coordinates,
	of matrices (determinants, inverse matrices, matrices of a linear map, eigenvalues and eigenvectors, diagonalisation, etc) is covered		
-	solving systems of linear equations, the geometry of a 3D space (including the scalar product and the vector product) and S	VD.	
B0B01LGR	Logic and Graphs	Z,ZK	5
	basics of mathematical logic and graph theory. Syntax and semantics of propositional and predicate logic are introduced. The importance	1	onsequence
	and of the relationship between a formula and its model is stressed. Further, basic notions from graph theory are introduce	ed.	
B0B01MA1	Mathematical Analysis 1	Z,ZK	7
	The aim of the course is to introduce students to basics of differential and integral calculus of functions of one variable.	, ,	I
B0B01MA2	Mathematical Analysis 2	Z,ZK	7
	rs an introduction to the differential and integral calculus in several variables and basic relations between curve and surface integrals	1 '	ns function
-	series and power series with application to Taylor and Fourier series.		
B0B01PST	Probability and Statistics	Z,ZK	7
B0B04A21	English Language A2-1	Z	-
	The course is open to students who are beginners in their second language. Course objective: Achieving competence in basic E	1	I
B0B04A22	English Language A2-2	7	0
	en to students who are beginners in their second foreign language. The course objective is to develop and sustain their basic knowle	-	-
B0B04B11			0
	English Language B1-1 Broadening the basic knowledge of general English; mastering basic specialised language; focusing on text analysis and vocabulary ex	. –	, v
Course objective. L	English.	parision, understan	ung spoken
B0B04B12	English Language B1-2	Z	0
	التان المناور المنافعة المالية المناور الم مناور المناور الممناور المناور المناور المناور المناور الم		-
Course objective. L	English.	parision, understan	ung spoken
B0B04B1K	English language B1 - classified assessment	KZ	0
	verifying of the student's skills of B1 level	1	-
B0B04B21	English Language B2-1	Z	3
	gned as a full-year, two semester preparation course for the universitys compulsory B2-level English Examination (Anglický jazyk B2	- zkouška - B0B04B	32Z*). While
	used on helping students reach a level required to pass the B2-level English Examination (or improve their English for a higher mark		-
academic and tech	nical vocabulary and grammar expected of students at the university level. *NOTE: This exam is also used for determining an appropri-	ate level of English	for Erasmus
	/ International Study.		
B0B04B22	English Language B2-2	Z	3
This course is desi	gned as a full-year, two semester preparation course for the universitys compulsory B2-level English Examination (Anglický jazyk B2-	· zkouška - B0B04E	2Z *). While
the course is foc	used on helping students reach a level required to pass the B2-level English Examination (or improve their English for a higher mark), it also focuses me	ore on the
academic and tech	nical vocabulary and grammar expected of students at the university level. *NOTE: This exam is also used for determining an appropri-	ate level of English	for Erasmus
	/ International Study.		
B0B04B2Z	English language B2 - exam	Z,ZK	0
I) The B2 English E	xam is a compulsory subject for all Faculty of Electrical Engineering students at the Czech Technical University. According to the Stu	dy and Examinatio	n Rules and
Regulations for Stu	idents at CTU (Part III, Article 4), a compulsory subject is one whose completion is a necessary condition in order to successfully cor	nplete the study pro	ogramme. In
	res the passing of an examination evaluated on the scale A, B, C, D, or E (SERR Part III, Article 6). II) According to the Common Euro		
	EFR), an international standard for describing language ability, the definition of an English language learner who has achieved the B2		-
	rstand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisa		-
	ntaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed t	-	-
-	wpoint on a topical issue giving the advantages and disadvantages of various options. III) Students who have successfully passed ar		
within the past five	years may present their certificate to the Department of Languages, Faculty of Electrical Engineering.Upon approval, students are the	en exempt from both	n the Written
B0B16ET1	Test and the Oral Part. For a list of approved international exams go the department website: http://jazyky.fel.cvut.cz/ Ethic 1	KZ	4
	is to provide the students an orientation not only in general problems of ethics but above all to offer instructions for solving various sit	1	1
	f the subject are discussions in which students can react to lectures but also to actual questions coming with news and look for the c		
parts 0			

	Philosophy 1	KZ	4
We deal with the	most important persons, schools and ideas of ancient philosophy. We are concerned especially on transdisciplinary nature of philos	ophy and connecti	on of old
	philosophical thoughts with recent problems of science, technology, economics and politics.		
B0B16FIL	Philosophy	ZK	2
We deal with the	most important persons, schools and ideas of ancient philosophy. We are concerned especially on transdisciplinary nature of philos	ophy and connecti	on of old
	philosophical thoughts with recent problems of science, technology, economics and politics.		
B0B16HI1	History 1	KZ	4
B0B16HT1	History of science and technology 1	KZ	4
B0B16HTE	History of technology and economic	ZK	2
B0B16MPL	Psychology for managers	ZK	2
B0B16MPS	Psychology	Z,ZK	4
B0B33OPT	Optimization	Z,ZK	7
The course provides	s an introduction to mathematical optimization, specifically to optimization in real vector spaces of finite dimension. The theory is illustration	ted with a number o	of examples.
	You will refresh and extend many topics that you know from linear algebra and calculus courses.		
B0B35APO	Computer Architectures	Z,ZK	5
B0B36DBS	Database Systems	Z,ZK	6
	ned as a basic database course mainly aimed at the student ability to design a relational data model and to use the SQL language f		
data querying and	to choose the appropriate degree of transaction isolation. Students will also get acquainted with the most commonly used indexing	-	ise system
	architecture and their management. They will verify their knowledge during the elaboration of a continuously submitted seminar		
B0B36PJV	Programming in Java	Z,ZK	6
	in the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course al	-	
	e. The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working wit		
	In important topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and knowled	•	
	sks and semester work, which will be submitted continuously through the source code version control system. The semester work sc		oints for the
	correctness and efficiency of the code, as well as points that take into account the quality of the source codes, their readability and	-	
B0B36PRP	Procedural Programming	Z,ZK	6
The course accomp	anies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structu	res and processing	user inputs
	tudents master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cre	-	
	me time, the effort is to build students an overview of the program operation, data model, memory access, and management. Therefore		
	s a direct link between the program data structures and their representation in the computer memory. Students will get acquainted not		
-	with debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality ar		
	lence is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a l		ig existing
	plementations. Evaluation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the s		_
B4B01DMA	Discrete Mathematics	Z,ZK	5
	nts meet some important topics from the field of discrete mathematics. Namely, they will explore divisibility and calculations modulo n,		ions, binary
Telations, mappin	gs, cardinality of sets, induction, and recurrence equations. The second aim of this course is to teach students the language of math	ematics, both pass	sively and
	actively, and introduce them to mathematics as science.		_
B4B01JAG	actively, and introduce them to mathematics as science. Languages, Automats and Gramatics	Z,ZK	6
B4B01JAG	actively, and introduce them to mathematics as science. Languages, Automats and Gramatics theory of finite automata and grammars: deterministic and non deterministic finite automata, languages accepted by finite automata, r	Z,ZK egular expressions	6
B4B01JAG Basic notions of the	actively, and introduce them to mathematics as science. Languages, Automats and Gramatics theory of finite automata and grammars: deterministic and non deterministic finite automata, languages accepted by finite automata, r and languages generated by grammars with emphasis to context free grammars. A very brief introduction of Turing machine	Z,ZK egular expressions es.	6 . Grammars
B4B01JAG Basic notions of the B4B01NUM	actively, and introduce them to mathematics as science. Languages, Automats and Gramatics theory of finite automata and grammars: deterministic and non deterministic finite automata, languages accepted by finite automata, r and languages generated by grammars with emphasis to context free grammars. A very brief introduction of Turing machine Numerical Analysis	Z,ZK egular expressions es. Z,ZK	6 Grammars 6
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The aim of the cour	rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space search	h, problem represe	entation and
	ation of knowledge using formal logic, methods of automated reasoning, and an introduction to Markov decision making, and to two-		
also part of the in	nter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students with a deeper and broader ins	ight into the field o	f artificial
	intelligence. More information is available at https://prg.ai/minor.		_
B4B38PSIA	Computer Networks	Z,ZK	5
B4BPROJ6	Unassisted project	Z	6
BBAP20	Bachelor thesis	Z	20
BE4B33SEA	Subject in english - abroad	Z,ZK	0
	The subject serves for validation of the duty to complete at least one compulsory course of the program in English.		
BE4B35PSR	Real-time Systems Programming	Z,ZK	6
The goal of this co	burse is to provide students with basic knowledge about software development for real-time systems, for example in control and embed	edded applications	. The main
focus is on embedd	ed systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to for	mally verify timing	correctness
-	other set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have	-	-
-	nts will first solve a few simple tasks to familiarize them with basic components of VxWorks RTOS and to benchmark the used OS an		
	s represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students	-	x task of
	itical motion control application which will require full utilization of RTOS features. All the tasks at the labs will be implemented in C (c		
BE4B36FUP	Functional Programming	Z,ZK	6
	ces students into the techniques of functional programming, the advantages and disadvantages of this programming paradigm, and its		
	sense that the programmer symbolically describes the problem to be solved, rather than specifying the exact sequence of operation		
e e	sence of the solved problem and implementing even more complex algorithms compactly. Functional programming has notable adva	a 1	
	ion of algorithms, and the most useful functional programming concepts are increasingly often introduced to standard programming lar		
	mming on symbols, rather than numbers, functional programming has been heavily used in in artificial intelligence fields, such as agent se is also part of the inter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students with a de		
	the field of artificial intelligence. More information is available at https://prg.ai/minor.	eper and broader	insigni into
		Z,ZK	6
BE4B36ZUI	Introduction to Artificial Intelligence		6
	rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space search		
	ation of knowledge using formal logic, methods of automated reasoning, and an introduction to Markov decision making, and to two- nter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students with a deeper and broader ins		
	intelligence. More information is available at https://prg.ai/minor.	igni into the held o	i al uncial
BE4B38PSIA		Z.ZK	5
	Computer Networks	,	-
	l to principles and technologies of Computer Networks. Physical layer media, analog and digital modulations, network topologies, MA ion models, coding and cryptography basics are introduced. Widely used LAN technologies are then presented together with their fea		-
	explained and internetworking approaches are presented.	aures. Internet pro	
BE4B39VGO		Z,ZK	6
	Creating graphic content urse is to provide theory behind geometric modeling and modeling of materials, give students an overview of methods used in the pr		
	o apply those methods in praxis. At the seminars, students will learn how to design and create three-dimensional scene, create and ap	-	
graphics and now it	(e.g., wall finishes, wood, sky) and geometrical details, and position and set-up lights in the scene.		ig materials
BE5B32PKS	Computer and Communication Networks	Z,ZK	6
	rse is to familiarize students with current trends in the switched local networks and the key functions of routing protocols in IP network	∠,∠r∖	
	ise is to idminiarize students with current trends in the switched local networks and the key functions of routing protocols in in network	e The course is a	-
	primarily practically then theoretically	ks. The course is a	-
RE5R22RD7	primarily practically then theoretically.		imed rather
BE5B33RPZ	Pattern Recognition and Machine Learning	Z,ZK	imed rather
The basic formulat	Pattern Recognition and Machine Learning ions of the statistical decision problem are presented. The necessary knowledge about the (statistical) relationship between observat	Z,ZK ions and classes c	imed rather 6 of objects is
The basic formulat	Pattern Recognition and Machine Learning ions of the statistical decision problem are presented. The necessary knowledge about the (statistical) relationship between observat ng on the raining set. The course covers both well-established and advanced classifier learning methods, as Perceptron, AdaBoost, S	Z,ZK ions and classes of Support Vector Mac	imed rather 6 of objects is chines, and
The basic formulat	Pattern Recognition and Machine Learning ions of the statistical decision problem are presented. The necessary knowledge about the (statistical) relationship between observat ng on the raining set. The course covers both well-established and advanced classifier learning methods, as Perceptron, AdaBoost, S course is also part of the inter-university programme prg.ai Minor. It pools the best of AI education in Prague to provide students with	Z,ZK ions and classes of Support Vector Mac	imed rather 6 of objects is chines, and
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