# Study plan

# Name of study plan: Open Informatics - Computer Games and Graphics 2018

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: Open Informatics Type of study: Bachelor 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: 2018\_BOIBAP Name of the group: Bachelor Project Requirement credits in the group: In this group you have to gain 20 credits Requirement courses in the group: In this group you have to complete 1 course Credits in the group: 20 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
BBAP20	Bachelor thesis Roman mejla Roman mejla (Gar.)	Z	20	12S	L,Z	Р

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Characteristics of the courses of this group of Study Plan: Code=2018\_BOIBAP Name=Bachelor Project

BBAP20 Bachelor thesis

Code of the group: 2018\_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:

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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=2018\_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	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: 2018\_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

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Note on the gr	Oup.	1	r	1	I.	
	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, <b>authors</b> and guarantors (gar.)					
	Algorithms					
B4B33ALG	Marko Genyk-Berezovskyj, Daniel Pr ša <b>Daniel Pr ša</b> Marko Genyk-Berezovskyj (Gar.)	Z,ZK	6	2P+2C	Z	Р
B0B35APO	Computer Architectures Pavel Píša, Richard Šusta, Petr Št pán Pavel Píša Pavel Píša (Gar.)	Z,ZK	5	2P+2L	L	Р
B0B36DBS	Database Systems Martin imná, Václav Kratochvíl Martin imná Martin imná (Gar.)	Z,ZK	6	2P+2C+4C	L	Ρ
B4B01DMA	Discrete Mathematics Petr Habala Petr Habala Petr Habala (Gar.)	Z,ZK	5	2P+2S	Z	Р
B0B01LAG	Linear Algebra Ji í Velebil, Jakub Rondoš, Natalie Žukovec, Daniel Gromada, Josef Dvo ák, Mat j Dostál <b>Ji í Velebil</b> Ji í Velebil (Gar.)	Z,ZK	8	4P+2S	Z	Р
B0B01LGR	Logic and Graphs 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	Р
B0B01MA2	<b>Mathematical Analysis 2</b> Miroslav Korbelá, Petr Hájek, Martin Bohata, Jaroslav Tišer, Karel Pospíšil, Paola Vivi, Hana Tur inová <b>Petr Hájek</b> Jaroslav Tišer (Gar.)	Z,ZK	7	4P+2S	L,Z	Р
B4B35OSY	<b>Operating Systems</b> Petr Št pán, Michal Sojka <b>Michal Sojka</b> Michal Sojka (Gar.)	Z,ZK	4	2P+2C	Z	Р
B0B33OPT	<b>Optimization</b> Tomáš Werner, Petr Olšák, Mirko Navara, Tomáš Kroupa <b>Tomáš Werner</b> Tomáš Werner (Gar.)	Z,ZK	7	4P+2C	Z,L	Ρ
B4B36PDV	Parallel and Distributed Computing Mat j Kafka, Michal Jakob Michal Jakob Michal Jakob (Gar.)	Z,ZK	6	2P+2C	L	Р
B4B38PSIA	Computer Networks Ji í Novák, Jan Holub <b>Ji í Novák</b> Ji í Novák (Gar.)	Z,ZK	5	2P+2L	L	Р
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	Р
B0B36PJV	<b>Programming in Java</b> Ji í Vok ínek, Martin Mudroch, Ladislav Serédi <b>Ji í Vok ínek</b> Ji í Vok ínek (Gar.)	Z,ZK	6	2P+3C+7C	L	Р
B4B33RPH	Solving Problems and other Games Tomáš Svoboda, Petr Pošík Petr Pošík Tomáš Svoboda (Gar.)	KZ	6	2P+3C	Z	Р
B4BPROJ6	<b>Unassisted project</b> Tomáš Svoboda, Petr Pošík, Ji í Šebek, Jaroslav Sloup, Ivan Jelínek, Katarína Žmolíková <b>Petr Pošík</b>	Z	6	0+2	Z,L	Ρ
Characteristics of the courses of this group of Study Plan: Code=2018_BOIP Name=Compulsory subjects of the programme						
B4B33ALG	Algorithms			2	Z,ZK	6
In the course, the algori	In the course, the algorithms development is constructed with minimum dependency to programming language; nevertheless the lectures and seminars are based on Java. Basic data					
types a data structures,	basic algorithms, recursive functions, abstract data types, stack, queues, trees, searching,	, sorting, special a	application a	algorithms, E	Dynamic progra	amming.
Students are able to de	sign and construct non-trivial algorithms and to evaluate their effectivity.					
BOBSSAPO	Computer Architectures			2	2,2K	5
B0B36DBS	Database Systems			Z	<u> ′,ZK</u>	6

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The course is designed	as a basic database course mainly aimed at the student ability to design a relational data model and to use the SQL langua	ge for data definiti	ion as well as for		
data querying and to choose the appropriate degree of transaction isolation. Students will also get acquainted with the most commonly used indexing techniques, database system					
architecture and their m	anagement. They will verify their knowledge during the elaboration of a continuously submitted seminar task.				
B4B01DMA	Discrete Mathematics	Z,ZK	5		
In this course students meet some important topics from the field of discrete mathematics. Namely, they will explore divisibility and calculations modulo n, diophantine equations, binary					
relations, mappings, cardinality of sets, induction, and recurrence equations. The second aim of this course is to teach students the language of mathematics, both passively and					

actively, and introduce them to mathematics as science.							
B0B01LAG	Linear Algebra	Z,ZK	8				
The course covers the initial parts of linear algebra. Firstly, the basic notions of a linear space and linear mappings are covered (linear dependence and independence, basis, coordinates,							
etc). The calculus of matrices (determinants, inverse matrices, matrices of a linear map, eigenvalues and eigenvectors, diagonalisation, etc) is covered next. The applications include							
solving systems of linear equations, the geometry of a 3D space (including the scalar product and the vector product) and SVD.							
B0B01LGR	Logic and Graphs	Z,ZK	5				
This course covers basics of mathematical logic and graph theory. Syntax and semantics of propositional and predicate logic are introduced. The importance of the notion of consequence							
and of the relationship between a formula and its model is stressed. Further, basic notions from graph theory are introduced.							

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.							
B0B01MA2	Mathematical Analysis 2	Z,ZK	7				
The subject covers an i	ntroduction to the differential and integral calculus in several variables and basic relations between curve and surface integral	ls. Other part con	ains function				
series and power series	s with application to Taylor and Fourier series.						
B4B35OSY	Operating Systems	Z,ZK	4				
Lecture introduces ope	ration system's basic concepts and principles as processes, threads, communication and synchronization, virtual memory, dr	ivers, file systems	, basic security				
aspects. These topics a	re theoretically described and demonstrated on Linux and Windows OS with multi-core systems. Practical exercises from OS	in C programmin	g language will				
be solved on labs. Stud	ents will work with Linux OS and micro-kernel NOVA.						
B0B33OPT	Optimization	Z,ZK	7				
The 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 examples.				
You will refresh and ext	end many topics that you know from linear algebra and calculus courses.						
B4B36PDV	Parallel and Distributed Computing	Z,ZK	6				
B4B38PSIA	Computer Networks	Z,ZK	5				
B0B01PST	Probability and Statistics	Z,ZK	7				
B0B36PRP	Procedural Programming	Z,ZK	6				
The course accompanie	s basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data stru	ctures and proces	sing user inputs				
are developed. Student	s master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cr	eating readable a	nd reusable				
programs. At the same t	ime, the effort is to build students an overview of the program operation, data model, memory access, and management. There	fore, the C progra	nming language				
is used that provides a	lirect link between the program data structures and their representation in the computer memory. Students will get acquainted	not only with prog	ram compilation				
and linking but also with	i debugging and profiling. Labs aim to acquire practical skills of implementing simple individual tasks, emphasizing functionality	/ and accuracy of	implementation.				
Student independence	is developed by a set of homework with the possibility of optional and bonus assignments. The final task is an integration of a	larger program u	sing existing				
implementations. Evalu	ation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the selected tasks						
B0B36PJV	Programming in Java	Z,ZK	6				
The course builds on th	e basics of algorithms and programming from the first semester and introduces students to the Java environment. The course	e also focus on th	e object concept				
of the Java language. T	he topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working	with files and usi	ng generic types				
will be introduced. An in	sportant topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and know	ledge of Java is to	ested in the form				
of solving partial tasks	and semester work, which will be submitted continuously through the source code version control system. The semester work	scoring consists	of points for the				
	Solving Drobleme and other Comes	K7	6				
	Solving Problems and other Games		0 blom how to				
The main motivation is to let students to deal with rear-world problems property. When working on real problems the student shall rear how to decompose the big problem, how to define the student shall rear how to decompose the big problem, how to define the student shall be been as the student shall be be							
using internaces, now to test and valuate motivate the students to study difficult theoretical subjects. They should approace the important questions, Ideally, at the and of the subject							
the student should be eager to study deeper about informatics. The course also explains the basis of the object oriented design, software testing, ways for writing readable and robust							
codes.							
B4BPROJ6	Unassisted project	Z	6				
<u> </u>							

Code of the group: 2015\_BZAJ 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 Havlí ková, Pavla Péterová, Erik Peter Stadnik, Michael Ynsua, Dana Saláková, Petra Juna Jennings <b>Petra Juna Jennings</b> 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	Р

#### 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	s skills of B1 level					
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 Exami	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	ly programme. In			
addition, this requires th	he 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-Intern	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	of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects					
and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options. III) Students who have successfully passed an approved international exam						
within the past five years 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 to the department website: http://jazyky.fel.cvut.cz/						

Name of the block: Povinné p edm ty zam ení Minimal number of credits of the block: 30

#### Code of the group: 2018\_BOIPS4 Name of the group: Compulsory subjects of the branch 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 5 courses Credits in the group: 30 Note on the group:

Note on the group		ere nje gr				
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
B4B39IUR	User interfaces implementation Zden k Mikovec, Miroslav Macík Miroslav Macík Zden k Míkovec (Gar.)	Z,ZK	6	2P+2S	Z	ΡZ
B4B39HRY	Computer Games Ji í Bittner, David Sedlá ek David Sedlá ek Ji í Bittner (Gar.)	Z,ZK	6	2P+2C	Z	ΡZ
B0B39PGR	Computer graphics programming Jaroslav Sloup, Petr Felkel Jaroslav Sloup Petr Felkel (Gar.)	Z,ZK	6	2P+2C+8D	L	ΡZ
BE4B39VGO	Creating graphic content Ladislav molík Ladislav molík (Gar.)	Z,ZK	6	2P+2C+8D	Z	ΡZ
B4B36ZUI	Introduction to Artificial Intelligence Viliam Lisý, Branislav Bošanský Branislav Bošanský Michal P chou ek (Gar.)	Z,ZK	6	2P+2C	L	ΡZ

#### Characteristics of the courses of this group of Study Plan: Code=2018\_BOIPS4 Name=Compulsory subjects of the branch

B4B39IUR	User interfaces implementation	Z,ZK	6		
Based on the user interface specification (created by design team), the student will be able to implement user interface and communicate efficiently with other stakeholders taking part					
in the whole process of	design, testing, and implementation of the user interface.				
B4B39HRY	Computer Games	Z,ZK	6		
Students familiarize the	mselves with the issues encountered during programming computer games. They learn topics such as 3D model representation	on, animations, co	Ilision detection,		
physical simulation, and	real-time rendering in the context of computer games development. During exercises they will develop a computer game in te	eams: from the ga	me concept and		
design document, throu	gh programming game mechanics to the presentation in front of a jury of experts. The exercises are build around the Unity fr	amework.			
B0B39PGR	Computer graphics programming	Z,ZK	6		
BE4B39VGO	Creating graphic content	Z,ZK	6		
The aim of this course is	s to provide theory behind geometric modeling and modeling of materials, give students an overview of methods used in the	process of creatin	ng 2D and 3D		
graphics and how to app	bly those methods in praxis. At the seminars, students will learn how to design and create three-dimensional scene, create and	l apply textures im	nitating materials		
(e.g., wall finishes, wood	d, sky) and geometrical details, and position and set-up lights in the scene.				
B4B36ZUI	Introduction to Artificial Intelligence	Z,ZK	6		
The aim of the course is	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 two-player games. 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.					

## Name of the block: Compulsory elective courses Minimal number of credits of the block: 0 The role of the block: PV

Code of the group: 2018\_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: -Studenti programu Otevřená informatika musí v bakalářském studiu projít alespoň jedním anglicky přednášeným povinným předmětem programu či oboru. Bližší podmínky jsou uvedeny na stránce
  - https://oi.fel.cvut.cz/cs/bakalarsky-program (sekce Jazyková příprava). Níže je uveden seznam doporučených předmětů, kterými můžete tuto povinnost splnit. Pokud je česká varianta součástí vašeho povinného studijního plánu, pochopitelně vam anglická varianta nahradí tuto českou. Kromě uvedeného seznamu lze povinnost splnit zápisem anglicky přednášeného předmětu na zahraniční stáži (Erasmus, apod.). V obou výše uvedených případech bude povinnost v KOSu splněna automaticky. Poslední možností je splnit tuto povinnost na žádost ijnak (předmět mimo seznam, bakalářská práce vedená zahraničním vedoucím, apod.).\\

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	<b>Subject in english - abroad</b> Petr Pošík <b>Petr Pošík</b> Petr Pošík (Gar.)	Z,ZK	0		Z,L	PV

BE5B32PKS	Computer and Communication Networks Pavel Bezpalec Pavel Bezpalec	Z,ZK	6	2P + 2C	Z	PV
BE5B35APO	Computer Architectures Pavel Píša, Richard Šusta Pavel Píša Pavel Píša (Gar.)	Z,ZK	6	2P+2L	L	PV
BE4B38PSIA	Computer Networks Ji í Novák, Jan Holub <b>Ji í Novák</b> Ji í Novák (Gar.)	Z,ZK	5	2P+2L	L	PV
BE4B36FUP	Functional Programming Rostislav Hor ík, Tomáš Votroubek Rostislav Hor ík Michal P chou ek (Gar.)	Z,ZK	6	2P+2C	L	PV
BE4B36ZUI	Introduction to Artificial Intelligence Viliam Lisý, Branislav Bošanský <b>Branislav Bošanský</b> Branislav Bošanský (Gar.)	Z,ZK	6	2P+2C	L	PV
BE5B35LSP	Logic Systems and Processors Richard Šusta, Martin Hlinovský Martin Hlinovský Richard Šusta (Gar.)	Z,ZK	6	3P+2L	Z	PV
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	PV
BE4B39VGO	Creating graphic content Ladislav molík Ladislav molík (Gar.)	Z,ZK	6	2P+2C+8D	Z	PV
Characteristics of the	courses of this group of Study Plan: Code=2018_BOIAPP Nar	ne=Subjects	in engli	sh		
BE4B39VGO Cre The aim of this course is to p graphics and how to apply the (e.g., wall finishes, wood, sky	eating graphic content rovide theory behind geometric modeling and modeling of materials, give students an ose methods in praxis. At the seminars, students will learn how to design and create the and geometrical details, and position and set-up lights in the scene.	overview of mether ee-dimensional s	nods used i scene, creat	n the process e and apply te	ZK of creating 2 extures imitat	6 2D and 3D ing materials
The subject serves for valida	tion of the duty to complete at least one compulsory course of the program in English.			Z,	,2R	0
BE5B32PKS Col The aim of the course is to fa primarily practically then theo	mputer and Communication Networks amiliarize students with current trends in the switched local networks and the key funct pretically.	ions of routing pro	otocols in II	P networks. T	,ZK   he course is a	6 aimed rather
BE5B35APO Co	mputer Architectures			Z	,ZK	6
Subject provides overview of Structures of computer syste and buses topologies. Empha and virtualization techniques software view to the contrary	basic building blocks of computer systems. Explanation starts from hardware side wh ms. Topics cover building blocks description, CPU structure, multiple processors interc asis is placed on clarification of interconnection of hardware components with software . General principles are more elaborated during presentation of examples of multiple s . Students are lead from basic programming on CPU level to the interaction with raw h	ere it extends kno connections, input e support, mainly standard CPU arc ardware	owledge pre t/output sub lower level: hitectures.	esented in the osystem and b s of operating Exercises are	e previous lec pasic overvie systems, de more focuse	tures of w of network vice drivers ed on the
BE4B38PSIA Co	mputer Networks			Z	,ZK	5
Subject is devoted to principl data communication models, explained and internetworkin	es and technologies of Computer Networks. Physical layer media, analog and digital r coding and cryptography basics are introduced. Widely used LAN technologies are th g approaches are presented.	nodulations, netw en presented tog	ork topolog other with t	ies, MAC me heir features.	thods, ARQ a Internet prot	algorithms, ocols are
BE4B36FUP Fui	nctional Programming			Z.	,ZK	6
This course introduces stude is declarative in the sense the focusing on the essence of the automated verification of algo of functional programming on learning. This course is also the field of artificial intelligence	Its into the techniques of functional programming, the advantages and disadvantages at the programmer symbolically describes the problem to be solved, rather than specifies solved problem and implementing even more complex algorithms compactly. Function in the most useful functional programming concepts are increasingly often in symbols, rather than numbers, functional programming has been heavily used in in art part of the inter-university programme prg.ai Minor. It pools the best of AI education in ce. More information is available at https://prg.ai/minor.	of this programmin ying the exact se- onal programming troduced to stand ficial intelligence Prague to provide	ng paradigr quence of c g has notat ard prograr fields, such e students	n, and its use operations rec ole advantage nming langua as agent sys with a deeper	in practice. I quired to solv is for paralleli ges. Because tems or symb r and broader	his approach e it. It allows zation and e of the focus polic machine insight into
BE4B36ZUI Intr The aim of the course is to consolving, representation of known of the inter university	roduction to Artificial Intelligence over the basics of symbolic artificial intelligence. We will focus on algorithms of informa- owledge using formal logic, methods of automated reasoning, and an introduction to N the programs are al Minor. It pools the bast of Al adjustion in Program to provide study	ed and uninforme larkov decision m	d state spa naking, and	ce search, pro to two-player	,ZK oblem repres games. This	6 entation and course is
intelligence. More information	h is available at https://prg.ai/minor.	ento with a deepe				
BE5B35LSP Log The course introduces the ba at the hardware level and the will learn their description in using circuit simulation. Pract structure, cache, and pipeling	gic Systems and Processors asic hardware structures of computing resources, their design, and architecture. It prov design of embedded processor systems with peripherals on modern FPGA programma VHDL, from logic to more complex sequential circuits to practical finite state machine tical problems are solved using development boards used at hundreds of leading unive e processing.	vides an overview ble logic circuits, (FSM) designs. Th ersities around the	of the pose which are in hey will also e world. The	Z sibilities of pe ncreasingly w o master the c e course ends	ZK forming data idely used too correct design s with RISC-\	6 a operations day. Students n procedure / processor
BE5B33RPZ Pat The basic formulations of the acquired by learning on the r Neural Nets. This course is a into the field of artificial intelli	tern Recognition and Machine Learning estatistical decision problem are presented. The necessary knowledge about the (stati aining set. The course covers both well-established and advanced classifier learning r Iso part of the inter-university programme prg.ai Minor. It pools the best of AI educatio igence. More information is available at https://prg.ai/minor.	stical) relationshi nethods, as Perce n in Prague to pro	p between eptron, Ada ovide stude	Z observations Boost, Suppo nts with a dee	ZK and classes o ort Vector Mac eper and broa	6 of objects is chines, and ader insight
Name of the block	k: Elective courses					
Minimal number of	of credits of the block: 0					
The role of the blo	ock: V					

Code of the group: 2018\_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	V
B0B16FIL	Philosophy Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	ZK	2	2P+0S	Z,L	V
B0B16FI1	Philosophy 1 Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	KZ	4	2P+2S	Z	V
B0B16HTE	History of technology and economic Marcela Efmertová, Jan Mikeš Marcela Efmertová Marcela Efmertová (Gar.)	ZK	2	2P+0S	Z,L	V
B0B16HT1	History of science and technology 1 Marcela Efmertová, Jan Mikeš Marcela Efmertová Marcela Efmertová (Gar.)	KZ	4	2P+2S	Z	V
B0B16HI1	History 1 Milena Josefovi ová Milena Josefovi ová Milena Josefovi ová (Gar.)	KZ	4	2P+2S	Z	V
B0B16MPS	<b>Psychology</b> Jan Fiala <b>Jan Fiala</b> Jan Fiala (Gar.)	Z,ZK	4	2P+2S	Z,L	V
B0B16MPL	Psychology for managers Jan Fiala <b>Jan Fiala</b> Jan Fiala (Gar.)	ZK	2	2P+0S	Z,L	V

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

B0B16ET1	Ethic 1	KZ	4
Aim of this subject is to	provide the students an orientation not only in general problems of ethics but above all to offer instructions for solving various	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 communa	l 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	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

## 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

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 Englis	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	rstanding 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 or	n helping students reach a level required to pass the B2-level English Examination (or improve their English for a higher mar	k), it also focuses	more on the
academic and technical	vocabulary and grammar expected of students at the university level. *NOTE: This exam is also used for determining an approximately a student of the student	priate level of Eng	glish 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 I	32 - zkouška - B0l	B04B2Z *). While
the course is focused or	n helping students reach a level required to pass the B2-level English Examination (or improve their English for a higher mar	k), it also focuses	more on the
academic and technical	vocabulary and grammar expected of students at the university level. *NOTE: This exam is also used for determining an approximately a student of the student	priate level of Eng	glish for Erasmus
/ International Study.			
Code of the gr	oup: 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: 2018\_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: ~Nabídk

~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
B0B01LAG	Linear Algebra	Z,ZK	8
The course covers t	he initial parts of linear algebra. Firstly, the basic notions of a linear space and linear mappings are covered (linear dependence and inde	pendence, basis,	coordinates,
etc). The calculus t	solving systems of linear equations, the geometry of a 3D space (including the scalar product and the vector product) and SV	/D.	
B0B01LGR	Logic and Graphs	Z,ZK	5
This course covers I	pasics of mathematical logic and graph theory. Syntax and semantics of propositional and predicate logic are introduced. The importanc and of the relationship between a formula and its model is stressed. Further, basic notions from graph theory are introduced	e of the notion of co d.	onsequence
B0B01MA1	Mathematical Analysis 1	Z,ZK	7
B0B01MA2	Mathematical Analysis 2	7.7K	7
The subject cover	s an introduction to the differential and integral calculus in several variables and basic relations between curve and surface integrals.	Other part contair	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 The course is open to students who are beginners in their second language. Course objective: Achieving competence in basic E	Z nglish.	
B0B04A22	English Language A2-2	Z	0
The course is ope	en to students who are beginners in their second foreign language. The course objective is to develop and sustain their basic knowled	ge of the English	language.
B0B04B11	English Language B1-1	Z	0
Course objective: B	roadening the basic knowledge of general English; mastering basic specialised language; focusing on text analysis and vocabulary exp English.	ansion; understan	aing spoken
B0B04B12	English Language B1-2	Z	0
Course objective: B	roadening the basic knowledge of general English; mastering basic specialised language; focusing on text analysis and vocabulary exp	ansion; understan	ding spoken
	English.		<u>^</u>
B0B04B1K	English language B1 - classified assessment verifying of the student's skills of B1 level	ΚZ	0
B0B04B21	English Language B2-1	Z	3
This course is desig	ned as a full-year, two semester preparation course for the universitys compulsory B2-level English Examination (Anglický jazyk B2-	zkouška - B0B04	32Z*). While
the course is focu	ised on neiping students reach a level required to pass the B2-level English Examination (or improve their English for a higher mark) nical vocabulary and grammar expected of students at the university level *NOTE. This exam is also used for determining an appropria	it also focuses me te level of English	for Frasmus
	/ International Study.		
B0B04B22	English Language B2-2	Z	3
This course is desig	ned as a full-year, two semester preparation course for the universitys compulsory B2-level English Examination (Anglický jazyk B2 -	zkouška - B0B04E	2Z *). While
academic and techr	nical vocabulary and grammar expected of students at the university level. *NOTE: This examination (of improve their English for a higher mark)	te level of English	for Erasmus
	/ International Study.	<u> </u>	
B0B04B2Z	English language B2 - exam	Z,ZK	0
I) The B2 English E Regulations for Stu	xam is a compulsory subject for all Faculty of Electrical Engineering students at the Czech Technical University. According to the Students at CTLL (Part III, Article 4), a compulsory subject is one whose completion is a necessary condition in order to successfully com	ly and Examinatio	n Rules and
addition, this require	es 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	piete the study pit	f Reference
for Languages (CE	FR), an international standard for describing language ability, the definition of an English language learner who has achieved the B2	(Upper-Intermedia	ate) level is
one who can unders	stand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisat	ion. Can interact w	ith a degree
and explain a view	raneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed to	approved internati	onal exam
within the past five y	rears may present their certificate to the Department of Languages, Faculty of Electrical Engineering. Upon approval, students are the	n exempt from both	the Written
	Test and the Oral Part. For a list of approved international exams go to the department website: http://jazyky.fel.cvut.cz/		-
BUB16E11	ETNIC 1 s to provide the students an orientation not only in general problems of ethics but above all to offer instructions for solving various situ	KZ ations of human li	4 fe 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 co	mmunal answers.	
B0B16FI1	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 philosophical thoughts with recent problems of science, technology, economics and politics	ophy and connecti	on of old
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.		
	History 1 History of acience and technology 1	KZ	4
	History of technology and economic	r∠	4
B0B16MPI	Psychology for managers	2K	2
B0B16MPS	Psvcholoav	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 illustrat	ed with a number o	of examples.
DOD25AD0	You will refresh and extend many topics that you know from linear algebra and calculus courses.	7 71/	F
DUBJJAPU		∠,∠ň	5

The course is desire	Database Systems	Z.ZK	6
1	gned as a basic database course mainly aimed at the student ability to design a relational data model and to use the SQL language f	or data definition a	s well as for
data querying and	t to choose the appropriate degree of transaction isolation. Students will also get acquainted with the most commonly used indexing	techniques, databa	ase system
	architecture and their management. They will verify their knowledge during the elaboration of a continuously submitted seminar	r task.	
B0B36PJV	Programming in Java	Z,ZK	6
The course builds of	on the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course al	so focus on the obj	ject concept
of the Java languag	ge. The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working wit	h files and using ge	eneric types
will be introduced.	An important topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and knowled	lge of Java is tested	d in the form
of solving partial ta	sks and semester work, which will be submitted continuously through the source code version control system. The semester work so	coring consists of p	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	reusability.	
B0B36PRP	Procedural Programming	Z,ZK	6
The course accomp	panies basic programming emphasizing the data representation in computer memory. Furthermore, the concepts of linked data structu	res and processing	user inputs
are developed. S	tudents master the practical implementation of simple individual tasks. The course emphasizes acquiring programming habits for cre	ating readable and	l reusable
programs. At the sa	me time, the effort is to build students an overview of the program operation, data model, memory access, and management. I herefore	e, the C programmir	ng language
and linking but also	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	a accuracy of impl	ementation
Student independ	tence is developed by a set of homework with the possibility of optional and honus assignments. The final task is an integration of a l	arger program usin	a existina
im	plementations. Evaluation of coding style motivated by writing legible, understandable, and maintainable codes is also a part of the s	elected tasks.	ig oxiding
BOB39PGR	Computer graphics programming	7 7K	6
	Discrete Methomatics	7.74	5
In this course stude	DISURCE MALLET MALLET MALLES	dionhantine equat	tions binary
relations mappir	and more some important topics for the next of adjustment that 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.		
B4B33ALG	Algorithms	7 7K	6
In the course the a	I agrithms development is constructed with minimum dependency to programming language: nevertheless the lectures and seminars	are based on Java	. Basic data
types a data stru	ctures, basic algorithms, recursive functions, abstract data types, stack, queues, trees, searching, sorting, special application algorith	nms, Dynamic prod	ramming.
	Students are able to design and construct non-trivial algorithms and to evaluate their effectivity.		
B4B33RPH	Solving Problems and other Games	KZ	6
The main motivat	ion is to let students to deal with real-world problems properly. When working on real problems the student shall learn how to decom	pose the big proble	em, how to
define interfaces,	how to test and validate individual steps and so on. Many problems will actually be beyond the first-year-student skills. And many pro	blem will not be so	lved in the
optimal way. The	unsolved parts should motivate the students to study difficult theoretical subjects. They should generate the important questions. Idea	ally, at the end of th	ne subject,
the student should	be eager to study deeper about informatics. The course also explains the basis of the object oriented design, software testing, ways	for writing readable	e and robust
	codes.		
B4B35OSY	Operating Systems	Z,ZK	4
Lecture introduces	operation system's basic concepts and principles as processes, threads, communication and synchronization, virtual memory, drive	rs, file systems, ba	sic security
aspects. These top	pics are theoretically described and demonstrated on Linux and Windows OS with multi-core systems. Practical exercises from OS in	C programming la	nguage will
	be solved on labs. Students will work with Linux OS and micro-kernel NOVA.		
			r
B4B36PDV	Parallel and Distributed Computing	Z,ZK	6
B4B36PDV B4B36ZUI	Parallel and Distributed Computing Introduction to Artificial Intelligence	Z,ZK Z,ZK	6 6
B4B36PDV B4B36ZUI The aim of the cou	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc	Z,ZK Z,ZK h, problem represe	6 6 entation and
B4B36PDV B4B36ZUI The aim of the cou solving, represen	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation of knowledge using formal logic, methods of automated reasoning, and an introduction to Markov decision making, and to two-	Z,ZK Z,ZK h, problem represe -player games. This	6 6 entation and s course is
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation 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 Al education in Prague to provide students with a deeper and broader ins	Z,ZK Z,ZK h, problem represe player games. This sight into the field o	6 6 entation and s course is f artificial
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation 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.	Z,ZK Z,ZK h, problem represe player games. This sight into the field o	6 6 entation and s course is f artificial
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation 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. Computer Networks	Z,ZK Z,ZK h, problem represe player games. This sight into the field o Z,ZK	6 entation and s course is f artificial 5
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searce tation 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. Computer Networks Computer Games	Z,ZK Z,ZK h, problem represe player games. This sight into the field o Z,ZK Z,ZK	6 6 entation and s course is f artificial 5 6
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY Students familiarize	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searce tation 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. Computer Networks Computer Games a themselves with the issues encountered during programming computer games. They learn topics such as 3D model representation, it	Z,ZK Z,ZK h, problem represe player games. This sight into the field o Z,ZK Z,ZK animations, collisio	6 6 entation and s course is f artificial 5 6 n detection,
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY Students familiarize physical simulation	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searce tation 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 Al education in Prague to provide students with a deeper and broader ins intelligence. More information is available at https://prg.ai/minor. Computer Networks e themselves with the issues encountered during programming computer games. They learn topics such as 3D model representation, , and real-time rendering in the context of computer games development. During exercises they will develop a computer game in team	Z,ZK Z,ZK h, problem represe -player games. This sight into the field of Z,ZK Z,ZK animations, collisio ns: from the game of	6 6 entation and s course is f artificial 5 6 n detection, concept and
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY Students familiarize physical simulation design	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searce tation 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 Al education in Prague to provide students with a deeper and broader ins intelligence. More information is available at https://prg.ai/minor. Computer Networks computer Games e themselves with the issues encountered during programming computer games. They learn topics such as 3D model representation, , and real-time rendering in the context of computer games development. During exercises they will develop a computer game in team document, through programming game mechanics to the presentation in front of a jury of experts. The exercises are build around the	Z,ZK Z,ZK ch, problem represe player games. This sight into the field of Z,ZK Z,ZK animations, collisio ns: from the game of e Unity framework.	6 6 entation and s course is f artificial 5 6 n detection, concept and
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY Students familiarize physical simulation design B4B39IUR	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation 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 Al education in Prague to provide students with a deeper and broader ins intelligence. More information is available at https://prg.ai/minor. Computer Networks Computer Games e themselves with the issues encountered during programming computer games. They learn topics such as 3D model representation, , and real-time rendering in the context of computer games development. During exercises they will develop a computer game in team document, through programming game mechanics to the presentation in front of a jury of experts. The exercises are build around the User interfaces implementation	Z,ZK Z,ZK ch, problem represe player games. This sight into the field of Z,ZK Z,ZK animations, collisio ns: from the game of e Unity framework. Z,ZK	6 6 entation and s course is f artificial 5 6 n detection, concept and 6
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY Students familiarize physical simulation design B4B39IUR Based on the user	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation 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 Al education in Prague to provide students with a deeper and broader ins intelligence. More information is available at https://prg.ai/minor. Computer Networks Computer Rames e themselves with the issues encountered during programming computer games. They learn topics such as 3D model representation, , and real-time rendering in the context of computer games development. During exercises they will develop a computer game in team document, through programming game mechanics to the presentation in front of a jury of experts. The exercises are build around the User interfaces implementation interface specification (created by design team), the student will be able to implement user interface and communicate efficiently with in the program team of dorign teams.	Z,ZK Z,ZK h, problem represe player games. This sight into the field o Z,ZK Z,ZK animations, collisio ns: from the game o e Unity framework. Z,ZK other stakeholders	6 6 entation and s course is f artificial 5 6 n detection, concept and 6 s taking part
B4B36PDV B4B36ZUI The aim of the cou solving, represen also part of the i B4B38PSIA B4B39HRY Students familiarize physical simulation design B4B39IUR Based on the user	Parallel and Distributed Computing Introduction to Artificial Intelligence rse is to cover the basics of symbolic artificial intelligence. We will focus on algorithms of informed and uninformed state space searc tation 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 Al education in Prague to provide students with a deeper and broader ins intelligence. More information is available at https://prg.ai/minor. Computer Networks Computer Reames e themselves with the issues encountered during programming computer games. They learn topics such as 3D model representation, , and real-time rendering in the context of computer games development. During exercises they will develop a computer game in team document, through programming game mechanics to the presentation in front of a jury of experts. The exercises are build around the User interfaces implementation interface specification (created by design team), the student will be able to implement user interface and communicate efficiently with in the whole process of design, testing, and implementation of the user interface.	Z,ZK Z,ZK h, problem represe player games. This sight into the field o Z,ZK Z,ZK animations, collisio ns: from the game o e Unity framework. Z,ZK other stakeholders	6 6 entation and s course is f artificial 5 6 n detection, concept and 6 s taking part
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BE4B39VGO	Creating graphic content	Z,ZK	6
The aim of this course is to provide theory behind geometric modeling and modeling of materials, give students an overview of methods used in the process of creating 2D and 3D			
graphics and how to apply those methods in praxis. At the seminars, students will learn how to design and create three-dimensional scene, create and apply textures imitating materials			
(e.g., wall finishes, wood, sky) and geometrical details, and position and set-up lights in the scene.			
BE5B32PKS	Computer and Communication Networks	Z,ZK	6
The aim of the course is to familiarize students with current trends in the switched local networks and the key functions of routing protocols in IP networks. The course is aimed rather			
primarily practically then theoretically.			
BE5B33RPZ	Pattern 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 observations and classes of objects is			
acquired by learning on the raining set. The course covers both well-established and advanced classifier learning methods, as Perceptron, AdaBoost, Support Vector Machines, and			
Neural Nets. 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.			
BE5B35APO	Computer Architectures	Z,ZK	6
Subject provides overview of basic building blocks of computer systems. Explanation starts from hardware side where it extends knowledge presented in the previous lectures of			
Structures of computer systems. Topics cover building blocks description, CPU structure, multiple processors interconnections, input/output subsystem and basic overview 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 contrary. Students are lead from basic programming on CPU level to the interaction with raw hardware.			
BE5B35LSP	Logic Systems and Processors	Z,ZK	6
The course introduces the basic hardware structures of computing resources, their design, and architecture. It provides an overview of the possibilities of performing data operations			
at the hardware level and the design of embedded processor systems with peripherals on modern FPGA programmable logic circuits, which are increasingly widely used 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 master the correct design procedure			
using circuit simulation. Fractical problems are solved using development boards used at numbers used an number site around the world. The course ends with RISC-V processor			
DEZD	Structure, cache, and pipeline processing.	7	0
	Salety in Electrical Engineering for a Bachelor's Degree	∠ A of it This introduc	U
appropriate fundamentale of Sefek (Electrical Equipacities Dasic knowing of electrical equipment and installation as to avoid danger alising from operation of it. This introductory course			
DECZZ			
BEZZ	Basic Health and Occupational Safety Regulations	<u>ک</u>	U Lin December
The guidelines were worked out based on the training scheme for heath and Occupational Safety designed for employees and students of the Czech technical University in Prague,			
which was provided by the Rector solution of the Orisidered one of the Dask duties of all employees and students. The knowledge of health and Occupational Salety			
	regulations forms an integral and permanent part of quantication requirements. This program is obligatory.	7	4
TV-V1	Physical education	Ζ	1
IVKLV	Physical Education Course	Ζ	0
TVKZV	Physical Education Course	Z	0
TVV	Physical education	Z	0
TVV0	Physical education	Z	0

For updated information see <u>http://bilakniha.cvut.cz/en/f3.html</u> Generated: day 2025-07-31, time 02:57.