Study plan

Name of study plan: Bachelor branch Web and Software Engineering, spec. Web Engineering, in Czech, 2015-2020

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Informatics, valid until 2024 Type of study: Bachelor full-time Required credits: 158 Elective courses credits: 22 Sum of credits in the plan: 180 Note on the plan: Tato verze studijního plánu je ur ena pro ro níky, které byl p ijaty ke studiu od akademického roku 2015/2016 do prezen ní formy studia bakalá ského programu.

Name of the block: Compulsory courses in the program Minimal number of credits of the block: 116 The role of the block: PP

Code of the group: BI-PP.2015

Name of the group: Compulsory Courses of Bachelor Study Program Informatics, Presented in Czech, Version 2015

Requirement credits in the group: In this group you have to gain 116 credits

Requirement courses in the group: In this group you have to complete 20 courses

Credits in the group: 116

Note on the group:

Povinný předmět BI-SI1 se studentům bez oboru nezapisuje automaticky. Zapíší si jej individuálně podle pokynů z katedry Softwarového inženýrství.

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
BI-AG1	Algorithms and Graphs 1 Dušan Knop	Z,ZK	6	2P+2C	Z	PP
BI-AAG	Automata and Grammars Jan Janoušek	Z,ZK	6	2P+2C	Z	PP
BI-BAP	Bachelor Thesis Zden k Muziká Zden k Muziká (Gar.)	Z	14		L,Z	PP
BI-BPR	Bachelor project Zden k Muziká Zden k Muziká (Gar.)	Z	2		Z,L	PP
BI-BEZ	Security Ji í Dostál	Z,ZK	6	2P+2C	L	PP
BI-CAO	Digital and Analog Circuits Martin Kohlík	Z,ZK	5	2P+2C	Z	PP
BI-DBS	Database Systems <i>Ji í Hunka</i>	Z,ZK	6	2P+2R+1L	Z,L	PP
BI-DPR	Document., Presentation, Rhetorics Alena Libánská, Ond ej Guth, Petra Pavlí ková, Dana Vynikarová Ond ej Guth Dana Vynikarová (Gar.)	KZ	4	2P+2C	Z,L	PP
BI-LIN	Linear Algebra Daniel Dombek Daniel Dombek (Gar.)	Z,ZK	7	4P+2C	L	PP
BI-MLO	Mathematical Logic Kate ina Trlifajová Kate ina Trlifajová Kate ina Trlifajová (Gar.)	Z,ZK	5	2P+1C	Z	PP
BI-OSY	Operating Systems Ladislav Vagner	Z,ZK	5	2P+1R+1L	. L	PP
BI-PSI	Computer Networks Jan Fesl	Z,ZK	5	2P+1R+1C	L	PP
BI-PST	Probability and Statistics Petr Novák	Z,ZK	5	2P+1R+1C	Z	PP
BI-PA1	Programming and Algorithmics 1 Ladislav Vagner	Z,ZK	6	2P+2R+2C	Z	PP

BI-PA2	Programming and Algorithmics 2 Ladislav Vagner	Z,ZK	7	2P+1R+2C	L	PP		
BI-PS1	Programming in Shell 1 Zden k Muziká	KZ	5	2P+2C	Z	PP		
BI-SI1.2	Software Engineering I Ji í Mlejnek, Zden k Rybola Zden k Rybola Ji í Mlejnek (Gar.)	Z,ZK	5	2P+1C	Z,L	PP		
BI-SAP	Computer Structure and Architecture Hana Kubátová	Computer Structure and Architecture 7 7K 6 2						
BI-ZDM	Elements of Discrete Mathematics Ji ina Scholtzová, Jan Legerský Ji ina Scholtzová Josef Kolá (Gar.)	Z,ZK	5	2P+2C	Z	PP		
BI-ZMA	Elements of Calculus Ivo Petr Ivo Petr Tomáš Kalvoda (Gar.)	Z,ZK	6	3P+2C	Z	PP		
Characteristics of the courses of this group of Study Plan: Code=BI-PP.2015 Name=Compulsory Courses of Bachelor Study Program								
	nted in Czech, Version 2015	,						
	Algorithms and Graphs 1				,ZK	6		
	asics of efficient algorithm design, data structures, and graph theory, belonging to the core	-		-				
	from the course BI-DML.21, in which students acquire the knowledge and skills in combin so follows up knowledge from BI-MA1.21, the practical usage of asymptotic mathematics.	-		•	and space of	complexity of		
	Automata and Grammars	, in particular, the	asymptotic		,ZK	6		
-	to basic theoretical and implementation principles of the following topics: construction, use	and mutual trans	formations		· I	-		
	anslation finite automata, construction and use of pushdown automata, hierarchy of formal							
	ugh the module is applicable in designs of algorithms for searching in text, data compress		•		0 0			
BI-BAP	Bachelor Thesis				Z	14		
BI-BPR I	Bachelor project				Z	2		
	Security			7	,ZK	6		
	nathematical fundamentals of cryptography and have an overview of current cryptographic al	Igorithms and appl	ications: sy			-		
	also learn the fundamentals of secure programming and IT security, the fundamentals of		-		-			
They are able to use prop	perly and securely cryptographic primitives and systems that are based on these primitive	es.						
BI-CAO I	Digital and Analog Circuits			Z	,ZK	5		
°	ental understanding of technologies underlying electronic digital systems. They understan							
-	s, and conductors. They are able to design simple circuits and evaluate circuit parameters.	They understand	the differe	nces betweer	analog and	l digital modes		
of electronic devices.								
	Database Systems				,ZK	6		
	to the database engine architecture and typical user roles. They are briefly introduced to v aints) using a conceptual model and implement them in a relational database engine. The			-	-			
	the relational database model. They learn the principles of normalizing a relational database		-					
	arallel user access to a single data source, as well as recovering a database engine from							
	ith respect to speed of access to large quantities of data. This introductory-level course do	=	-		-	- 1		
optimizing database appli	ications, distributed database systems, data stores.							
BI-DPR I	Document., Presentation, Rhetorics				٢Z	4		
	e professional communication and writing of the scientific texts (bachelor's and diploma thes	sis). Students will l	earn to crea	ate and prepa	e interactive	e presentations		
	audience. Students will also learn to write technical reports and scientific texts.							
	Linear Algebra				,ZK	7		
-	zech. Students understand the theoretical foundation of algebra and mathematical princip		-					
	only linear. They know the basic methods for operating with matrices and linear spaces. Th y these mathematical principles to solving problems in 2D or 3D analytic geometry. They			-	-			
	Mathematical Logic			-	,ZK	5		
The course seminary is ta	5				,21	5		
	Operating Systems			7	,ZK	5		
	classical theory of operating systems (OS) in addition to the knowledge gained in the mo	dule "Programmir	na in Shell [.]			-		
	nreads implementations. They understand the problems of race conditions, thread schedu	-	-			-		
management of virtual me	emory, principles and architectures of disks, RAID and file systems. They are able to desi	gn and implemen	t simple mu	ultithreaded a	pplications.			
BI-PSI (Computer Networks			Z	,ZK	5		
Students understand the	basic common techniques, protocols, technologies, and algorithms necessary to commun	nicate in compute	r networks.	The topics ar	e primarily i	ocused on the		
-	O OSI model. They also get a basic understanding of communication media, security, and	I network adminis	tration. Stu	dents will be	able to write	a simple		
	configure a simple network.							
	Probability and Statistics				,ZK	5		
	e basics of probabilistic thinking, the ability to synthesize prior and posterior information a				-			
	basic models of random variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction they will be able to perform estimations of unknown distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the statistical dependence of two or							
more random variables.				ing the statist				
	Programming and Algorithmics 1			7	,ZK	6		
					· I	-		
	to formulate algorithms for solving basic problems and write them in the C language. They	understand data	types (sim	ple, structure	d, pointers).	expressions, l		
				-				
with linked lists.	to formulate algorithms for solving basic problems and write them in the C language. They			-				
	to formulate algorithms for solving basic problems and write them in the C language. They			searching, s				
BI-PA2	to formulate algorithms for solving basic problems and write them in the C language. They ncept of recursion. They learn to analyse simple cases of algorithm complexity. They know	v fundamental alg	orithms for	searching, s	,ZK	manipulating 7		
BI-PA2 I Students know the instrur	to formulate algorithms for solving basic problems and write them in the C language. They ncept of recursion. They learn to analyse simple cases of algorithm complexity. They know Programming and Algorithmics 2	w fundamental alg	lata types (searching, s	,ZK	nanipulating 7 e array, set,		

BI-PS1	Programming in Shell 1	KZ	5				
Students become know	edgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating syster	ns (file systems, p	processes and				
threads, access rights, i	threads, access rights, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, basic commands, and filters to						
process various text dat	process various text data.						
BI-SI1.2	Software Engineering I	Z,ZK	5				
Students learn the meth	ods of analysis and design of large software systems, which are typically designed and implemented in teams. They get pra-	ctical skill thanks	to applying				
hands-on analysis and	design of a large-scale software project that is to be developed within the concurrent BI-SP1 module. They get skill to use CA	SE tools and UM	L for modelling				
and solving software-rel	ated problems. They get overview of object-oriented analysis, design, architecture, validation, verification, and testing process	sses.					
BI-SAP	Computer Structure and Architecture	Z,ZK	6				
Students understand ba	sic digital computer units and their structures, functions, and hardware implementation: ALU, control unit, memory system, in	nputs, outputs, da	ta storage and				
transfer. In the labs, stue	dents gain practical experience with the design and implementation of the logic of a simple processor using modern digital d	esign tools. The s	ubject teaches				
basic knowledge of digit	tal computer construction principles, how a computer performs its operations, what is machine code, and what are its connect	ctions to higher pr	ogramming				
languages.							
BI-ZDM	Elements of Discrete Mathematics	Z,ZK	5				
Students get both a mar	thematical sound background, but also practical calculation skills in the area of combinatorics, value estimation and formula	approximation, to	ols for solving				
recurrent equations, and	d basics of graph theory.						
BI-ZMA	Elements of Calculus	Z,ZK	6				
Students acquire knowle	Students acquire knowledge and understanding of the fundamentals of classical calculus so that they are able to apply mathematical way of thinking and reasoning and are able to						
use basic proof technique	ues. They get skills to practically handle functions of one variable in solving the problems in informatics. They understand the	links between the	e integrals and				
sums of sequences. The	ey are able to estimate lower or upper bounds of values of real functions and to handle simple asymptotic expressions.						

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

Code of the group: BI-PZ-WSI-WI.2015

Name of the group: Compulsory Courses of Bachelor Specialization Web Engineering, in Czech, Version 2015

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 7 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BI-BIG	DB Technologies for Big Data Josef Gattermayer, Jan Matoušek, Monika Borkovcová Jan Matoušek Monika Borkovcová (Gar.)	KZ	4	2P+2C	Z	PZ
BI-PAI	Law and Informatics Zden k Ku era	ZK	3	2P	Z	ΡZ
BI-PPA	Programming Paradigms Jan Janoušek	Z,ZK	5	2P+2R	Z	PZ
BI-TJV	Java Technology Ond ej Guth	Z,ZK	4	2P+2C	Z	PZ
BI-XML	XML Technology Jan Mokrý	Z,ZK	4	2P+2C	L,Z	ΡZ
BI-TWA.1	Web Application Design Filip Glazar, David Bernhauer Filip Glazar David Bernhauer (Gar.)	Z,ZK	5	2P+2C	Z	PZ
BI-VWM	Searching the Web and Multimedia Databases Tomáš Skopal	Z,ZK	5	2P+1C	L	PZ

Characteristics of the courses of this group of Study Plan: Code=BI-PZ-WSI-WI.2015 Name=Compulsory Courses of Bachelor Specialization Web Engineering, in Czech, Version 2015

BI-BIG	DB Technologies for Big Data	KZ	4
This course is pre	ented in Czech.		•
BI-PAI	Law and Informatics	ZK	3
This course is pre	ented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BI-PPA	Programming Paradigms	Z,ZK	5
programming para on lambda calculu such as C++ and	vith basic paradigms of high-level programming languages, including their basic execution models, benefits, and limitations of par ligm and its basic principles are explained in details. Logic programming is introduced as another way of declarative programming and on Lisp (Racket) and Prolog programming languages. Moreover, usage of these principles is demonstrated on modern mai ava.	g. The principles a	re demonstrated
BI-TJV	Java Technology	Z,ZK	4
The subject goal i	to introduce the programming language Java. The student gains practical experiences for smaller enterprise application program	nming. This subject	t presents how
to build the three	nd more layers enterprise systems. The student practically exercises all communication interfaces for each layers (JDBC, RestW	eb services, JNDI	etc.). At the

BI-XML XML Technology	Z,ZK	4					
Students learn to make and validate XML documents (XML Schema, Relax, Schematron) and learn standard methods of their processing (SAX, DOM). An emphasis will be given to							
language XPath which enables addressing of parts of XML documents and its usage in different XML technologies. Students will also learn basics of	of XSLT programm	ing. XSLT and					
XPath programming will be based on version 2.0. Students will gain a broad overview of XML technologies.							
BI-TWA.1 Web Application Design	Z,ZK	5					
The basic course of web application development. Initially, the students become familiar with HTTP and its possibilities and partly with some proper	ties of language d	escribing the					
structure (HTML) and presentation of document on the Web (CSS). These skills provide the necessary basis for the development of Web application	ns, which will be de	emonstrated in					
modern libraries facilitate the development of Web pages applications. Server side will be demonstrated on PHP technology using frameworks Sym	fony 2, Doctrine 2.	Developments					
on the client side will be demonstrated using a JavaScript language with library jQuery and possibly MV* framework AngularJS.							
BI-VWM Searching the Web and Multimedia Databases	Z,ZK	5					
Students get basic overview about search techniques in the web environment that is interpreted as a very large distributed and heterogeneous stor	age of documents	. In particular,					
students acquire information about search techniques in text and hypertext documents (the web pages themselves) and about feature extraction fro	m web pages. The	y get detailed					
knowledge of similarity search in multimedia databases (generally in collections of unstructured data). They also learn techniques for programming we	o search engines f	or the mentioned					
data types (documents).							
Name of the block: Compulsory elective economic-management courses							

Minimal number of credits of the block: 4

The role of the block: VE

Code of the group: BI-PV-EM.2015

Name of the group: Compulsory Elective Economical Courses of Bc. Program Informatics, Presented in Czech, Ver. 2015

Requirement credits in the group: In this group you have to gain at least 4 credits (at most 12) Requirement courses in the group: In this group you have to complete at least 1 course (at most 3) Credits in the group: 4

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
BI-DAN	Taxes for non-Economists Savina Finardi, Tereza Ji íková Tereza Ji íková Savina Finardi (Gar.)	Z,ZK	4	2P+2C	Z	VE
FI-VEZ	economic-managerial course from a study abroad Miroslav Balík	Z	4	0+0	Z,L	VE
BI-FTR.1	Financial Markets Pavla Vozárová	Z,ZK	5	2P+2C	L	VE
BI-MEK	Macroeconomic Context of Domestic and World Economy Ivo Straka Ivo Straka Ivo Straka (Gar.)	Z,ZK	4	2P+2C	Z	VE
BI-PRP	Law and business Zden k Ku era, Martin Samek Martin Samek Zden k Ku era (Gar.)	Z,ZK	4	2P+1R	L	VE
BI-PRR	Project management David Pešek	KZ	4	2P+2C	Z	VE
BI-SEP	World Economy and Business Tomáš Evan Tomáš Evan Tomáš Evan (Gar.)	Z,ZK	4	2P+2C	L	VE
BI-MIK	Fundamentals of Microeconomics Tomáš Evan Tomáš Evan Tomáš Evan (Gar.)	Z,ZK	4	2P+2C	L	VE

Characteristics of the courses of this group of Study Plan: Code=BI-PV-EM.2015 Name=Compulsory Elective Economical Courses of Bc. Program Informatics, Presented in Czech, Ver. 2015

BI-DAN	Taxes for non-Economists	Z,ZK	4
Taxes, including social i	nsurance contributions, are obligatory payments paid by people or institutions to public budgets. This is the way how a significa	ant portion of GDF	is redistributed.
This course concerns w	ho pays which taxes or who bears the tax burden. The course introduces students to the tax theory and policy fundamentals a	ind shows how the	ey affect taxation
of income, consumption	n, and wealth. The course provides practical information on calculations of tax liabilities of both citizens and institutions as we	ll as information a	bout important
taxpayers' formal duties	s towards public administration.		
FI-VEZ	economic-managerial course from a study abroad	Z	4
A "Humanities subject t	hat has been studied abroad" is covered by the Humanities subject from a study abroad in Compulsory Humanities Module t	hat is required in	the curriculum.
The substitution is appr	oved by the Vice-Dean for study affairs on behalf of the Dean at the request of the student.		
BI-FTR.1	Financial Markets	Z,ZK	5
This course is presente	d in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BI-MEK	Macroeconomic Context of Domestic and World Economy	Z,ZK	4
This course is presente	d in Czech.		
BI-PRP	Law and business	Z,ZK	4
This course is presente	d in Czech.		
BI-PRR	Project management	KZ	4
This course is presente	d in Czech.		
BI-SEP	World Economy and Business	Z,ZK	4
This course is presente	d in Czech. The course introduces students of technical university to the international business. It does that predominantly by	comparing indivi	dual countries

and key regions of world economy. Students get to know about different religions and cultures, necessary for doing business in diverse societies as well as indexes of economic freedom, corruption and economic development, which are needed for the right investment decision. Seminars help to improve on the knowledge in the form of discussions based on individual readings. It is advised to take bachelor level of this course BIE-SEP as a prerequisite.

BI-MIK	Fundamentals of Microeconomics	Z,ZK	4
This course is presente	d in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		•

Name of the block: Povinné ekonomické Minimal number of credits of the block: 4 The role of the block: PE

Code of the group: BI-PP-EM.2015

Name of the group: Compulsory Economics and Management Bachelor Courses, in Czech, Version 2015 Requirement credits in the group: In this group you have to gain 4 credits

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 4 Note on the group:

Povinný předmět BI-EMP se studentům bez oboru nezapisuje automaticky. Zapíší si jej individuálně podle pokynů z katedry Softwarového inženýrství.

	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their					
Code	members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BI-EMP	Economics and Management Principles David Buchtela, Petra Pavlí ková David Buchtela David Buchtela (Gar.)	KZ	4	2P+2C	Z,L	PE

Characteristics of the courses of this group of Study Plan: Code=BI-PP-EM.2015 Name=Compulsory Economics and Management Bachelor Courses, in Czech, Version 2015

BI-EMP	Economics and Management Principles	KZ	4			
This course is aimed to	This course is aimed to fundamental problems of business economy. The course makes students familiar with a life cycle of business, specifically with fields: enterprise foundation,					
enterprise putting into s	enterprise putting into state economic environment (CR), management of property and capital structure, business transaction records keeping during an accounting period, a relation					
between business production and costs, evaluation of enterprise financial health and business rehabilitation or termination.						

Name of the block: Povinná zkouška z angli tiny Minimal number of credits of the block: 2 The role of the block: PJ

Code of the group: BI-ZKA

Name of the group: English Language, Internal Certifica

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 4)

Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 2

Note on the group: -- Předmět BI-ANG si zapisují studenti, kteří absolvovali přípravné kurzy z angličtiny a mají zápočet z předmětu BI-A2L. -- Předmět BI--ANG1 si zapisují studenti, kteří se na zkoušku připravovali samostatně. Tito studenti musí před vlastní zkouškou absolvovat zápočtovou písemku.

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
BI-ANG1	English Language Examination without Preparatory Courses Kate ina Valentová Kate ina Valentová Kate ina Valentová (Gar.)	Z,ZK	2		L	PJ
BIE-EEC	English language external certificate Zden k Muziká Zden k Muziká Zden k Muziká (Gar.)	Z	4		L	PJ
BI-ANG	English Language, Internal Certificate Kate ina Valentová Kate ina Valentová Kate ina Valentová (Gar.)	ZK	2		Z,L	PJ

Characteristics of the courses of this group of Study Plan: Code=BI-ZKA Name=English Language, Internal Certifica

BI-ANG1	English Language Examination without Preparatory Courses	Z,ZK	2		
BIE-EEC	English language external certificate	Z	4		
The BIE-ECC course ca	n be recognized for any active semester after the submission of a certificate certificate that demonstrates their proficiency in E	nglish comparable	e to or exceeding		
the B2 level of the Common European Framework of Reference for Languages.					
BI-ANG	English Language, Internal Certificate	ZK	2		
Course information and teaching materials can be found at https://moodle-vyuka.cvut.cz/course/search.php?search=BI-ANG					

Name of the block: Povinná t lesná výchova, sportovní kurzy Minimal number of credits of the block: 0

The role of the block: PT

Code of the group: BI-PT.2015

Name of the group: Compulsory Physical Education of Bachelor Program Informatics, in Czech, Version 2015

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
TV1	Physical Education	Z	0	0+2	Z	PT
TVV	Physical education	Z	0	0+2	Z,L	PT
TVV0	Physical education	Z	0	0+2	Z,L	PT
TV2	Physical Education	Z	0	0+2	L	PT
TVKLV	Physical Education Course	Z	0	7dní	L	PT
TVKZV	Physical Education Course	Z	0	7dní	Z	PT

Characteristics of the courses of this group of Study Plan: Code=BI-PT.2015 Name=Compulsory Physical Education of Bachelor Program Informatics, in Czech, Version 2015

TV1	Physical Education	Z	0
TVV	Physical education	Z	0
TVV0	Physical education	Z	0
TV2	Physical Education	Z	0
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

Name of the block: Compulsory elective humanities courses Minimal number of credits of the block: 2 The role of the block: VH

Code of the group: BI-PV-HU.2015

Name of the group: Compulsory Elective Humanity Courses of Bachelor Study Program Informatics, in Czech, Version 2015

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 6) Requirement courses in the group: In this group you have to complete at least 1 course Credits in the group: 2 Note on the group: Faculty guarantees the availability of these modules.

Note on the group: Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Scope Semester Code Completion Credits Role members) Tutors, authors and guarantors (gar.) Philosophy FI-FIL ΖK 2 2P Z,L VH Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.) **History of Mathematics and Informatics** L **BI-HMI** Z,ZK 3 2P+1C VН Alena Šolcová Alena Šolcová Alena Šolcová (Gar.) **History of Technology and Economics** FI-HTE ΖK 2 Z,L 2+0VH Jan Mikeš, Marcela Efmertová Jan Mikeš Jan Mikeš (Gar.) Humanities subject from a study abroad FI-HPZ Ζ 3 Z,L 0+0VH Miroslav Balík Managerial Psychology FI-MPL ΖK 2 2+0 Z,L VH Jan Fiala Introduction to European Economic History **BI-EHD** 3 2P+1C Z.L Z.ZK VН Tomáš Evan **Tomáš Evan** Tomáš Evan (Gar.) Cultural and Social Anthropology L,Z FI-KSA 2 ΖK 2P VH Jakub Šenovský Cultural and Social Anthropology **BI-KSA** 7K 2 2P Z.L Alena Libánská, Tomáš Houdek, Jakub Šenovský Jakub Šenovský Alena VН Libánská (Gar.) Introduction to Linguistics for Computer FI-ULI 2 2P ΖK L VH Václav Cvr ek Introduction to Gnoseology FI-GNO ΖK 2 L 2+0VН Ivo Janoušek

Characteristics of the courses of this group of Study Plan: Code=BI-PV-HU.2015 Name=Compulsory Elective Humanity Courses of Bachelor Study Program Informatics, in Czech, Version 2015

FI-FIL	Philosophy	ZK	2
see A0B16			
BI-HMI	History of Mathematics and Informatics	Z,ZK	3
This course is presented	l in Czech.		
FI-HTE	History of Technology and Economics	ZK	2
The course introduces the	ne scientific disciplines of history and technology, economic and social history of the Czech lands and Czechoslovakia in com	parison with the	development of
the European region 19	to 21 century .		
FI-HPZ	Humanities subject from a study abroad	Z	3
	at has been studied abroad" is covered by the Humanities subject from a study abroad in Compulsory Humanities Module that	it is required in th	ne curriculum.
The substitution is appro	wed by the Vice-Dean for study affairs on behalf of the Dean at the request of the student.		
FI-MPL	Managerial Psychology	ZK	2
BI-EHD	Introduction to European Economic History	Z,ZK	3
This course is presented	I in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
FI-KSA	Cultural and Social Anthropology	ZK	2
The one-semester cours	e aims to acquaint students with the basics of social and cultural anthropology as a scientific discipline dealing with the divers	ity of the world -	examples from
	n from our "exotic" cultures (topics: kinship, religion, social exclusion, migration, globalization, , material culture, language, hea	Ith, history, death	ı, etc) will be
shown. The course is an	interesting alternative to other humanities, taught at FIT.		
BI-KSA	Cultural and Social Anthropology	ZK	2
	e aims to acquaint students with the basics of social and cultural anthropology as a scientific discipline dealing with the divers		
	n from our "exotic" cultures (topics: kinship, religion, social exclusion, migration, globalization, , material culture, language, hea	ith, history, death	ı, etc) will be
shown. The course is pr			
FI-ULI	Introduction to Linguistics for Computer	ZK	2
This course is presented	l in Czech.		
FI-GNO	Introduction to Gnoseology	ZK	2
P edm t studenty uvádí	do teorie poznání, systémovým pohledem nahlíží na pole kultury, na vztahy a rozdíly mezi p írodními a humánními obory, v	lou a um ním. R	ozborem d jin
•	vých proud 20. století jsou ukázány prom ny paradigmat a p evrat k postmodernismu, analýzou paralelism ve v d a um n		
•	a teorii pírodních jazyk a sémiotiky je vedena diskuze i o kognitivních procesech, v historickém pehledu nastín na hlediska es		
	pojitých pírodních soustav a systém, v záv ru pednášek je pozornost v nována filozofii v dy a otázkám udržitelného rozvoj	Pedm tp edn	náší a garantuje
Ing. Ivo Janoušek CSc.			
			<u> </u>

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

Code of the group: BI-V-PRO_MG Name of the group: Elective Courses, Suitable for those who intend to apply for Master's program at FIT Requirement credits in the group: Requirement courses in the group: Credits in the group: 0

Note on the group:

Courses in this group are recommended for students who intend to enroll to master program at FIT.

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
BI-AG2	Algorithms and Graphs 2 Ond ej Suchý	Z,ZK	5	2P+2C	L	V

Characteristics of the courses of this group of Study Plan: Code=BI-V-PRO_MG Name=Elective Courses, Suitable for those who intend to apply for Master's program at FIT

This course, presented in Czech, introduces basic algorithms and concepts of graph theory as a follow=up on the introduction given in the compulsory course BI-AG1. It further delves					
into advances data structures and amortized complexity analysis. It also includes a very light introduction to approximation algorithms. For English version of the course see BIE-AG2.					

Code of the group: BI-V.2017Name of the group: Purely Elective Courses of Bachelor Programme BI, Version 2017Requirement credits in the group:Requirement courses in the group:Credits in the group: 0Note on the group:Volitelné předměty, které nejsou povinnými v programu ani žádného oboru či
zaměření

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
BI-ALO	Tutors, authors and guarantors (gar.) Algebra and Logic	Z,ZK	4	2P+1C	L	V
	Jan Starý Jan Starý Jan Starý (Gar.) Algorithms visually		-			
BI-AVI.21	Lud k Ku era Lud k Ku era Lud k Ku era (Gar.)	Z,ZK	4	2P+1C	L	V
BI-A2L	English language, preparation for the B2 level exam Kate ina Valentová Kate ina Valentová Kate ina Valentová (Gar.)	Z	2	2C	L	V
BI-APJ	Aplication Programming in Java Ji í Dan ek	Z,ZK	4	2P+1R+1C	Z	V
NI-AFP	Applied Functional Programming Marek Suchánek, Robert Pergl, Daniel N mec Robert Pergl Robert Pergl (Gar.)	КZ	5	2P+1C	L	V
BIE-ZUM	Artificial Intelligence Fundamentals Pavel Surynek Pavel Surynek Pavel Surynek (Gar.)	Z,ZK	4	2P+2C	L	V
BI-BLE	Blender Lukáš Ba inka Lukáš Ba inka Lukáš Ba inka (Gar.)	Z,ZK	4	2P+2C	L	V
NI-DSP	Database Systems in Practes Tomáš Vichta Tomáš Vichta Tomáš Vichta (Gar.)	Z,ZK	4	2P+1C	L	V
BI-STO	Storage and Filesystems	Z,ZK	4	2P+2C	L,Z	V
NI-DZO	Digital Image Processing	Z,ZK	4	2P+1C	L	V
NI-DDM	Distributed Data Mining Tomáš Borovi ka	KZ	4	3C	L	V
BI-EP1	Effective programming 1 Martin Ka er Martin Ka er Martin Ka er (Gar.)	Z	4	2P+2C	Z	V
BI-EP2	Efficient Programming 2 Martin Ka er Martin Ka er Martin Ka er (Gar.)	КZ	4	2P+2C	L	V
BI-EJA	Enterprise Java Ji í Dan ek Ji í Dan ek Ji í Dan ek (Gar.)	Z,ZK	4	2P+2C	L	V
BI-FMU	Financial and Management Accounting David Buchtela David Buchtela David Buchtela (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-HAM	HW accelerated network traffic monitoring Karel Hynek, Tomáš ejka Tomáš ejka (Gar.)	КZ	4	2P+1C	L	V
BI-ARD	Ji f Cvr ek, Robert Hülle, Vojt ch Miškovský, Jan ezní ek Robert Hülle Robert Hülle (Gar.)	КZ	4	3C	L	V
NI-IAM	Internet and Multimedia Ji í Melnikov	Z,ZK	4	2P+1C	L	V
BIE-IMA2	Introduction to Mathematics 2	Z	2	1C	Z	V
BI-CS2	C# language and data access Pavel Št pán Pavel Št pán Pavel Št pán (Gar.)	КZ	4	0P+3C	z	V
BI-CS3	Language C# - design of web applications Pavel Št pán Pavel Št pán Pavel Št pán (Gar.)	KZ	4	3C	Z	V
BI-SQL.1	Language SQL, advanced Michal Valenta Michal Valenta (Gar.)	КZ	4	3C	L	V
BI-QAP	Quantum algorithms and programming Tomáš Kalvoda, Ivo Petr Ivo Petr (Ivo Petr Gar.)	KZ	5	1P+2C	Z	V
NI-LSM	Statistical Modelling Lab Kamil Dedecius Kamil Dedecius (Gar.)	KZ	5	3C	L	V
NI-MPL	Managerial Psychology Jan Fiala Jan Fiala Jan Fiala (Gar.)	ZK	2	2P	Z,L	V
NI-MSI	Mathematical Structures in Computer Science Jan Starý Jan Starý Jan Starý (Gar.)	Z,ZK	4	2P+1C	L	V
BI-MPP.21	Methods of interfacing peripheral devices Miroslav Skrbek Miroslav Skrbek Miroslav Skrbek (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-MIT	Mikrotik technologies Jan Fesl Jan Fesl Jan Fesl (Gar.)	KZ	3	1P+2C	Z	V
NI-MOP	Modern Object-Oriented Programming in Pharo Marek Skotnica, Jan Blizni enko Robert Pergl Robert Pergl (Gar.)	KZ	4	3C	Z	V
BI-MVT.21	Modern Visualisation Technologies Ji í Chludil, Petr Pauš Petr Pauš Petr Pauš (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-MMP	Multimedia team project Zde ka echová Zde ka echová Zde ka echová (Gar.)	KZ	4	3C	Z,L	V
NI-OLI	Linux Drivers Jaroslav Borecký, Miroslav Skrbek Jaroslav Borecký Miroslav Skrbek (Gar.)	Z,ZK	4	2P+2C	L	V
BI-ACM	Programming Practices 1 Tomáš Valla, Ond ej Suchý Tomáš Valla Tomáš Valla (Gar.)	КZ	5	4C	L	V
BI-ACM2	Programming Practices 2 Tomáš Valla, Ond ej Suchý Tomáš Valla Tomáš Valla (Gar.)	КZ	5	4C	Z	V
BI-ACM3	Programming Practices 3 Tomáš Valla, Ond ej Suchý Tomáš Valla Tomáš Valla (Gar.)	КZ	5	4C	L	V

BI-ACM4	Programming Practices 4	KZ	5	4C	Z	v
BI-AND.21	Tomáš Valla, Ond ej Suchý Tomáš Valla Ond ej Suchý (Gar.) Programming for the Android Operating System	KZ	4	3C	L	v
	Jan Mottl, Jan Vep ek, Marek Kodr Jan Mottl Marek Kodr (Gar.) Programming in C#			00		, v
BI-CS1	Pavel Št pán, Helena Wallenfelsová Helena Wallenfelsová Pavel Št pán (Gar.)	KZ	4	3C	L,Z	V
BI-PJV	Programming in Java Miroslav Balík, Jan Blizni enko, Ji í Borský, Jan Zimolka Miroslav Balík Miroslav Balík (Gar.)	Z,ZK	4	2P+2C	Z,L	v
BI-PJS.1	JavaScript Programming Old ich Malec	KZ	4	3C	L	V
BI-KOT	Programing in Kotlin Jií Dan ek Jií Dan ek Jií Dan ek (Gar.)	Z,ZK	4	2P+2C	L	V
NI-PSL	Programming in Scala Jií Dan ek Jií Dan ek Jií Dan ek (Gar.)	Z,ZK	4	2P+1C	Z	V
BI-PMA	Programming in Mathematica Zden k Buk Zden k Buk Zden k Buk (Gar.)	Z,ZK	4	2P+2C	Z	V
BI-PHP.1	Programing in PHP	KZ	4	3C	Z	v
BI-PS2	Programming in shell 2 Lukáš Ba inka	Z,ZK	4	2P+2C	L	v
NI-PDD	Data Preprocessing Marcel Ji ina Marcel Ji ina Marcel Ji ina (Gar.)	Z,ZK	5	2P+1C	Z	v
BI-PKM	Introduction to mathematics Tomáš Kalvoda Tomáš Kalvoda Tomáš Kalvoda (Gar.)	Z	4		Z	v
NI-REV	Reverse Engineering	Z,ZK	5	1P+2C	Z	v
BI-SCE1	Ji í Dostál, Josef Kokeš, Róbert Lórencz Ji í Dostál Ji í Dostál (Gar.) Computer Engineering Seminar I	Z	4	2C	L,Z	v
BI-SCE2	Hana Kubátová Hana Kubátová Hana Kubátová (Gar.) Computer Engineering Seminar II Hana Kubátová Hana Kubátová Hana Kubátová (Gar.)	Z	4	2C	L,Z	v
BI-ST1	Network Technology 1	Z	3	2C	Z	v
BI-ST2	Alexandru Moucha Alexandru Moucha (Gar.) Network Technology 2	Z	3	3C	L	v
BI-ST3	Alexandru Moucha Alexandru Moucha (Gar.) Network Technology 3	Z	3	2C	Z	v
BI-ST4	Alexandru Moucha Alexandru Moucha (Gar.) Network Technology 4	Z	3	2C	L	v
BI-SOJ	Alexandru Moucha Alexandru Moucha (Gar.) Machine Oriented Languages	Z,ZK	4	2P+2C	L	V
BI-SVZ	Machine vision and image processing	Z,ZK	5	2P+2C	L,Z	v
NI-SYP	Lukáš Brchl, Marcel Ji ina, Jakub Novák Marcel Ji ina Marcel Ji ina (Gar.) Parsing and Compilers	Z,ZK	5	2P+1C	Z	v
BI-GIT	Jan Janoušek Jan Janoušek Jan Janoušek (Gar.) Version control system GIT	KZ	2	16P	Z,L	v
TV1	Petr Pulc Physical Education	Z	0	0+2	Z	V
TVV	Physical education	Z	0	0+2	Z,L	V
TVV0	Physical education	Z	0	0+2	Z,L	V
TV2	Physical Education	Z	0	0+2	L	V
TV2K1	Physical Education 2	Z	1		L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V
TVKLV	Physical Education Course	Z	0	7dní	L	V
BI-TS1	Theoretical Seminar I Dušan Knop, Tomáš Valla, Ond ej Suchý Tomáš Valla Tomáš Valla (Gar.)	Z	4	2C	Z	v
BI-TS2	Dasan Holp, Fornas Valla, Ond ej Suchý Tomáš Valla Fornas Valla (Gal.) Theoretical Seminar II Tomáš Valla, Ond ej Suchý (Gar.)	Z	4	2C	L	v
BI-TS3	Theoretical Seminar III Tomáš Valla, Ond ej Suchý, Ond ej Guth Tomáš Valla Tomáš Valla (Gar.)	Z	4	2C	Z	v
BI-TS4	Theoretical Seminar IV Tomáš Valla, Ond ej Suchý Tomáš Valla Tomáš Valla (Gar.)	Z	4	2C	L	v
BI-TDA	Test driven architecture Marek Hakala	KZ	4	2P+1C	Z,L	v
NI-TSP	Testing and Reliability Petr Fišer Martin Da hel Petr Fišer (Gar.)	Z,ZK	5	2P+2C	Z	v
BI-CCN	Compiler Construction Christoph Kirsch Christoph Kirsch (Gar.)	Z,ZK	5	3P	L	v
BI-TEX	TeX and Typography Petr Olšák Petr Olšák Petr Olšák (Gar.)	Z,ZK	4	2P+1C	L	v
BI-ULI	Introduction to Linux Zden k Muziká, Jan Ž árek, Dana ermáková, Petr Zemánek Zden k Muziká Zden k Muziká (Gar.)	Z	2	4D	z	v

BI-OPT	Introduction to Optical Networks Pavel Tvrdík	Z,ZK	4	2P+1C	Z	V
NI-VCC	Virtualization and Cloud Computing Tomáš Vondra, Jan Fesl Tomáš Vondra Tomáš Vondra (Gar.)	Z,ZK	5	2P+1C	L	V
BI-VHS	Virtual game worlds Radek Richtr Radek Richtr Radek Richtr (Gar.)	ZK	4	2P+2C	Z	V
BI-VR1	Virtual reality I Petr Klán, Petr Pauš Petr Klán Petr Klán (Gar.)	KZ	4	2P+2C	L,Z	V
BI-VR2	Virtual reality II Petr Klán Petr Klán (Gar.)	KZ	3	1P+2C	L	V
BI-VAK.21	Selected Applications of Combinatorics Tomáš Valla Tomáš Valla Tomáš Valla (Gar.)	Z	3	2R	L	V
BI-VMM	Selected Mathematical Methods Tomáš Kalvoda Tomáš Kalvoda (Gar.)	Z,ZK	4	2P+2C	L	V
NI-VYC	Computability Jan Starý Jan Starý (Gar.)	Z,ZK	4	2P+2C	L	V
BI-ZS10	Bachelor internship abroad for 10 credits Zden k Muziká Zden k Muziká (Gar.)	Z	10		Z,L	V
BI-ZS20	Bachelor internship abroad for 20 credits Zden k Muziká Zden k Muziká (Gar.)	Z	20		Z,L	v
BI-ZS30	Bachelor internship abroad for 30 credits Zden k Muziká Zden k Muziká (Gar.)	Z	30		Z,L	V
BI-ZIVS	Intelligent Embedded System Fundamentals Miroslav Skrbek Miroslav Skrbek Miroslav Skrbek (Gar.)	KZ	4	1P+3C	Z	V
BI-ZPI	Process engineering Robert Pergl Robert Pergl (Gar.)	KZ	4	1P+2C	L	V
BI-ZNF	PHP Framework Nette - basics Ji (Chludil	KZ	3	2P+1C	L	V
BI-ZRS	Basics of System Control Kate ina Hyniová	Z,ZK	4	2P+2C	Z	v
BI-IOS	Fundamentals of iOS Application Development for iPhone and iPad Rostislav Babá ek, Igor Rosocha Martin P Ipitel Martin P Ipitel (Gar.)	KZ	4	2C	Z	v
BI-ZWU	Introduction to Web and User Interfaces Lukáš Ba inka Lukáš Ba inka Jakub Klímek (Gar.)	Z,ZK	4	2P+2C	L	V
BI-3DT.1	3D Printing Miroslav Hron ok, Tomáš Sýkora Tomáš Sýkora Miroslav Hron ok (Gar.)	KZ	4	3C	L	V

Characteristics of the courses of this group of Study Plan: Code=BI-V.2017 Name=Purely Elective Courses of Bachelor Programme BI, Version 2017

TV1	Physical Education	Z	0			
TVV	Physical education	Z	0			
TVV0	Physical education	Z	0			
TV2	Physical Education	Z	0			
TVKLV	Physical Education Course	Z	0			
TVKZV	Physical Education Course	Z	0			
BI-ALO	Algebra and Logic	Z,ZK	4			
The course extends and deepens the study of topics touched upon in the basic course in logic.						
BI-AVI.21	Algorithms visually	Z,ZK	4			
The course complemen	ts other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the compute	r science that exte	end substantially			
knowledge presented in	BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.or	g <http: td="" www.al<=""><td>govision.org>)</td></http:>	govision.org>)			
that make understandir	g the principles of algorithms easy.					
BI-A2L	English language, preparation for the B2 level exam	Z	2			
The content of the cour	se corresponds to the preparation for the English exam at the B2 level. Requirements for course credit. Academic Achieveme	nt - students are	due to: -Take an			
active part in the langua	age instructionMeet the requirements for writing assignments - Summary, Abstract, Argumentation PaperSucceed in both	the midterm and	the final term			
tests with the success r	ate set at 70%80% and over in BOTH tests means ORAL EXAM ONLY (no written part). Requirements will be specified by	individual teacher	s during the first			
class of the term.						
BI-APJ	Aplication Programming in Java	Z,ZK	4			
This course is presente	d in Czech. Advanced technologies in Java.					
NI-AFP	Applied Functional Programming	KZ	5			
This course is presente	d in Czech. Functional programming represents one of the traditional programming paradigms. Traditional and novel functional	al programming la	inguages are on			
the rise nowadays and	the functional paradigm becomes an important construct of traditionally imperative languages (C++, C#, Java). As such, mas	ering this paradic	jm becomes a			
necessary competence	of a software engineer: the theory and especially the practice.					
BIE-ZUM	Artificial Intelligence Fundamentals	Z,ZK	4			
Students are introduced	to the fundamental problems in the Artificial Intelligence, and the basic methods for their solving. It focuses mainly on the class	sical tasks from the	he areas of state			
space search, multi-age	ent systems, game theory, planning, and machine learning. Modern soft-computing methods, including the evolutionary algori	hms and the neu	ral networks, will			
be presented as well.						
BI-BLE	Blender	Z,ZK	4			
The course extends know	wledge of opensource program Blender from BI-MGA (Multimedia and Graphics Applications) course. It is intended for those	interested in 3D	graphics and			
animation. It offers a co	mplete and practically oriented introduction to Blender environment. Students may continue to BI-PGA (Programming graphic	s applications) co	ourse.			
NI-DSP	Database Systems in Practes	Z,ZK	4			
This course is presente	-					

BI-STO Storage and Filesystems	Z,ZK	4
The student will learn principles and current solutions of storage systems architecture. The module explains principles of data store, protection, and a	1 1	storage scaling,
load balancing and high availability.		
NI-DZO Digital Image Processing	Z,ZK	4
This course presents a comprehensive overview of modern methods for interactive editing of digital images and video. It mainly deals with practical	-	-
implement and have an interesting theoretical basis. Visually attractive applications provide better understanding of basic theoretical background that		
of digital image processing. This course will introduce algorithms solving the following practical applications: edge-aware editing, tone mapping, HD	-	-
frequency domain, abstraction, hybrid images, gradient domain editing, seamless image stitching and cloning, digital photo-montage, color-to-gray interactive as-rigid-as-possible image deformation, free-form image registration, texture synthesis, interactive segmentation, colorization, painting, a		
NI-DDM Distributed Data Mining	KZ	4 maturiy.
Course focuses on state-of-the-art approaches for distributed data mining and parallelization of machine learning algorithms. Students will gain han		-
data processing framework Apache Spark and with existing distributed DM / ML algorithms. They will learn principles of their parallel implementation		-
approaches to parallelize other algorithms. The course is prezented in czech language.		
BI-EP1 Effective programming 1	Z	4
The course is taught in Czech.	1	I
BI-EP2 Efficient Programming 2	KZ	4
Continuation of Efficient Programming 1. Students will practice implementation of algorithms by solving typical problems. Various ways of solving inc	dividual problems	are discussed,
with the aim to choose the best one and avoid implementation errors.		
BI-EJA Enterprise Java	Z,ZK	4
The course is on advanced technologies in the Java programming language. The focus is on technologies for development of enterprise information	systems which a	re connected to
a database and are accessed through the web interface.		
BI-FMU Financial and Management Accounting	Z,ZK	5
The aim of the course is explanation of basic terms in the theory of accounting, the principles of balancing the property amounts and liabilities in the	•	
operations in accounts and accounting statements including opening and closing of bookkeeping. The course provides students with a legal modific	-	
of economic operations based on current methods of double-entry bookkeeping for enterprising subjects in the Czech Republic. Principles of manage	gement accounting	g are base of
Business Inteligence moduls in Business information systems.	KZ	4
BI-HAM HW accelerated network traffic monitoring	1	
This course introduces students to modern and widely used technologies and principles in the area of network infrastructure and traffic monitoring. network traffic are mandatory skills to network operators (planning and development of resources and infrastructure) and security analysts alike (as	-	-
for analysis). The goals of the course are to acquaint students with the modern trends and cornerstone principles in the area of monitoring network		
level and to develop their practical abilities in this field.		
BI-ARD Interactive applications on Arduino	KZ	4
The subject is designed for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple app	lications for mode	rn programmable
kits and control varied peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedde	d systems, i.e. to s	see the results
not only on display of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore	re is suitable even	for Web and
Software Engineering students.		
NI-IAM Internet and Multimedia	Z,ZK	4
The NI-IAM course is focused on principles and modern technologies for network transmissions of audiovisual (AV) signals. The syllabus includes a	-	
presentation of AV signals (output), network communication protocols, device interfaces, codecs, data formats and stereoscopy. We will look at practi audiovisual transmissions. Within the labs, students will practically assemble AV transmission chains using HW and SW technologies and verify the		
the quality and latency of AV transmissions. Students will learn how to build Internet infrastructure for end-to-end AV transmissions from the recording		
for audience.		
BIE-IMA2 Introduction to Mathematics 2	Z	2
Students refresh and extend knowledge of elementary functions and their properties. Students understand basic mathematical principles and they a	-	-
examples.		·
BI-CS2 C# language and data access	KZ	4
The C# language and data access course objective is to introduce students several data access technologies - database, XML, NoSQL - on the Mid	1	he students will
get to know objects used to retrieve data - Connection, Command, Data Reader and DataAdapter v ADO.NET. Next, they will learn to use current te	chnologies such a	as LINQ - a set
of features for querying and updating data, integrated directly with the .NET platform languages, which enable LINQ use with Objects, XML and SQ		
and LINQ to SQL). Another objective is the Entity Framework - an object-relational mapper that enables .NET developers to work with relational dat		-
(ORM). This part of the course introduces Code First, Database First, Model First approaches. The students will also get to know the Conceptual M	odel, Storage Mod	lel and Mapping
(XML description).	1/7	4
BI-CS3 Language C# - design of web applications	KZ	4
The students will be introduced to current technologies in web application development on the .NET platform. They will acquire a comprehensive overv on thisplatform. They will learn to create WebAPI and to use it by client programs.	lew of the develop	nent possibilities
	KZ	4
BI-SQL.1 Language SQL, advanced Module is based on knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language.	1	1
triggers, recursive queries, OLAP support, object-relational constructions. Part of the course is dedicated to practical database optimization from the p	-	
structures like indexes, clusters, index-organized tables, and materialized views. as well as from the point of view query optimization. Execution plar		
will be discussed. Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are based on Or	acle DBMS and pa	artially on
PostgreSQL.		
BI-QAP Quantum algorithms and programming	KZ	5
Course aims at giving students hands-on experience with quantum computers and their programming. We focus on fundaments of quantum mechanic	-	-
are based, and algorithms showing advantages and limitations of quantum computing. During tutorials students work in open-source software deve	-	
on Python language. Knowledge of linear algebra at the level of BI-LA1 and BI-LA2 (or BI-LIN) is necessary. Previous completion of BI-MA2 or BI-V	MM and experience	ce with Python
might be an advantage. No previous knowledge of physics is assumed.		-
NI-LSM Statistical Modelling Lab	KZ	5
The subject is oriented on a single and multi-target tracking. The student both learns the existing methods and tries to implement them. The stress i available information and its modeling using numpy and scipy. The second half of the semester is focused on the design of methods and algorithms		
At this point, the subject is on the border of own research and may result in the topic of final work (diploma or bachelor thesis).	, and analyses 01 1	
NI-MPL Managerial Psychology	ZK	2

NI-MSI Mathematical Structures in Computer Science	Z,ZK	4
Mathematical semantics of programming languages. Data types as continous lattices, Scott topology. Procedures as continuous mappings. The Sco	tt model of lambd	a calculus.
Introduction to category theory.		1
BI-MPP.21 Methods of interfacing peripheral devices	Z,ZK	5
The course is focused on methods for interfacing of peripheral devices. Interfacing of real peripheral devices is focused on techniques based on Univ includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of		
drivers, simple application development, and APIs of selected devices.	JOD devices, Linc	
BI-MIT Mikrotik technologies	KZ	3
The main motivation of the subject stands in the introduction of the RouterOS operating system and some network Mikrotik technologies which are	1	-
middle internet service providers (ISPs). The students learn how to use and create the architectures of the network solutions which are based on th	e metallic, optical	or wireless links
and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary compute	er networks conce	pts like protocols
and technologies of the data-link, network and transport layer of the OSI model.		
NI-MOP Modern Object-Oriented Programming in Pharo	KZ	4
Object-oriented programming is currently one of the most widespread paradigms of software creation, especially enterprise information systems, while is used to build complex modern applications. In this course, we build on the knowledge acquired in the course BI-OOP and aim to further deepen the	,	
of object systems in modern pure object system Pharo (https://pharo.org). The course focuses on individual approach to students, their development	-	-
addition to deepening object programming skills, which are generally applicable in other OO languages, students will also gain the opportunity to we		
technologies in terms of semestral work with the possibility of cooperation with practice and related bachelor, diploma, postgraduate our direct invol	vement in the Pha	aro Consortium.
BI-MVT.21 Modern Visualisation Technologies	Z,ZK	5
The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and an		
high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the men	ioned technologie	es, namely fractal
and procedural visualization, scientific data visualization, and 3D model scanning.	1/7	4
BI-MMP Multimedia team project This course is presented in Czech.	KZ	4
	Z,ZK	4
NI-OLI Linux Drivers The Linux operating system is an important operating system for personal computer and also for embedded systems. Systems on chip and combinin	1 1	1 -
increase the variability of peripheral subsystems requiring specific software drivers. This course is an advanced course in the Linux driver developm		
course provides knowledge of Linux operating system architecture, principles of development of various types drivers, including practical experience		
BI-ACM Programming Practices 1	KZ	5
This course is presented in Czech.	·	
BI-ACM2 Programming Practices 2	KZ	5
This course is presented in Czech.		
BI-ACM3 Programming Practices 3	KZ	5
This course is presented in Czech.		_
BI-ACM4 Programming Practices 4	KZ	5
This course is presented in Czech. BI-AND.21 Programming for the Android Operating System	KZ	4
This course is presented in Czech.		4
BI-CS1 Programming in C#	KZ	4
The goal of the course is to introduce .NET Framework as a multi-language development platform. Then, programming language C#, its fundamenta	1	1 -
operators, arrays, loops, definitions and calls of functions will be discussed. Attention is focused on the object oriented programming in C# - class definitions are classed on the object oriented programming in C# - classed on the object oriented programming i	efinition and class	instancing,
constructors, methods, properties, static members, Garbage Collector, inheritance and polymorphism, collections, delegates, and generics. Debugg	ing and exception	n processing, as
well as work with files are emphasized.		
BI-PJV Programming in Java	Z,ZK	4
This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).	1/7	4
BI-PJS.1 JavaScript Programming Main goal of the course is an introduction to Javascript programming. Students will learn also best practices and will use tool that eases developme	KZ	4
recommended for students of BIE-WSI-WI.2015 branch of study and do not have required knowledge to register for BIE-TWA.1. They should register i	-	
of study.		
BI-KOT Programing in Kotlin	Z,ZK	4
Kotlin is a modern, statically-styled object-functional language that exploits the extensive Java language ecosystem while delivering a number of ad	vanced language	constructions.
The language is fully Java compliant and allows for mixed projects that preserve existing parts written in Java, and continue with the development o	i a modern, object	t-functional way
with minimum of boiler-plate code. Last but not least, Kotlin is suitable for designing of DSLs (Domain-Specific Languages).		
NI-PSL Programming in Scala	Z,ZK	4
The course introduces the modern programming language Scala which exploits object-functional paradigm. Scala comprises advance language fea advance standard library. Scala enables to use of applications functional patterns e.g. H-List, Monads, etc. Scala is used by many powerful frameworks		
Scalaz, etc.	and ibraries e.g.	ridy, Cassaliula,
BI-PMA Programming in Mathematica	Z,ZK	4
Students will be working with modern technical and scientific software. Students will learn how to use different programming styles (functional program		-
etc.), how to create dynamic interactive applications and visualisations, data processing and presentations.		
BI-PHP.1 Programing in PHP	KZ	4
The course is taught in Czech. Main goal of the course is an introduction to PHP - language and technology. Students will learn also best practices		
development in PHP. The course is recommended for students of BIE-WSI-WI.2015 branch of study and do not have required knowledge to register	for BIE-TWA.1.T	hey should
BI-PS2 Programming in shell 2	7 71/	4
BI-PS2 Programming in shell 2 Students gain a general overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In ac	Z,ZK	1 -
into shell and some other particular scripting languages and will get practical experience with shell script programming.	anon, mey yant a	a dooper moight
NI-PDD Data Preprocessing	Z,ZK	5
Students learn to prepare raw data for further processing and analysis. They learn what algorithms can be used to extract information from various data		1
time series, etc., and learn the skills to apply these theoretical concepts to solve specific problems in individual projects - e.g., extraction of character	ristics from image	es or from web
pages.		

BI-PKM	Introduction to mathematics	Z	4
This course is presented	d in Czech.		
NI-REV	Reverse Engineering	Z,ZK	5
	nted with the essentials of reverse engineering of computer software. They will learn how processes start and what happens		
	Inderstand how executable files are organized and how they interact with 3rd party libraries. Another part of the course is dec		
	C++. Students will also understand principles of disassemblers and obfuscation techniques. A part of the course will also be d ing work and which methods can be used to detect it. One of the lectures will be dedicated to the latest trends on the compute the computer of the second second second second second second second secon		
	ninars, where students will solve practically oriented tasks from the real world.		
BI-SCE1	Computer Engineering Seminar I	Z	4
	er Engineering is a (s)elective course for students who want to deal with deeper topics of digital design, reliability and resistance	ce to failures and a	attacks. Students
	ally within the subject. Each student or group of students solves some interesting topic with the selected supervisor. Part of	-	
	ssional literature and/or work in K N laboratories. The capacity of the subject is limited by the possibilities of the seminar tead	chers. The topics	are new for each
semester.	Computer Engineering Sominor II	Z	4
BI-SCE2 The Seminar of Comput	Computer Engineering Seminar II er Engineering is a (s)elective course for students who want to deal with deeper topics of digital design, reliability and resistanc		
	ally within the subject. Each student or group of students solves some interesting topic with the selected supervisor. Part of the subject is a supervisor.		
	ssional literature and/or work in K N laboratories. The capacity of the subject is limited by the possibilities of the seminar tead	-	
semester.			
BI-ST1	Network Technology 1	Z	3
	to providing the students basic information and practical skills from the area of digital and IP networks. The subject is acredite	ed under the Cisc	o Netacad -
CCNA1 - R&S Intro		7	0
BI-ST2	Network Technology 2	Z	3
This course is presented BI-ST3		Z	3
	Network Technology 3 nance their knowledge acquired from previous BI-ST1 and BI-ST2 courses. Principles of routing and switching presented durir	_	-
	the course. Students will be able to start fine-tune protocols' settings to gain certain advantages like increased efficiency, pre	-	
simple topology, security		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,
BI-ST4	Network Technology 4	Z	3
Students will further ent	hance their knowledge already acquired from previous BI-ST1, BI-ST2, and BI-ST3 courses. Principles of routing and switchi	ng presented duri	ng BI-ST1 and
-	her extended in BI-ST3. Students were able to start fine-tune protocols' settings to gain certain advantages like increased eff		-
	gy, security, etc. This module teaches students to configure and fine-tune Wide Area Networks and to experience a complete		
	ess) which radically differs from well-known Ethernet (broadcast) type of networks. Students will also manage router and swit ncy procedures. Also the security aspect is treated; students will learn possible intra- and inter-network attacks and the mitig		
network running.		ation ways while i	
BI-SOJ	Machine Oriented Languages	Z,ZK	4
	will gain an ability to create their own programs in the assembly language of the most common PC platform focusing on optima	· ·	-
	n of software with hardware. Next, there will be discussed x86 specifics of the majority of OSes from the application point of vie		
This knowledge will be u	used during reverse engineering, optimization, and evaluation of code security.		
BI-SVZ	Machine vision and image processing	Z,ZK	5
-	ecoming a common part of life by being universally available. Related to this phenomenon is the need to process and evaluat	-	
	lifferent types of camera systems and a variety of methods for image and video processing. The course is focused on practical at the graduates may encounter.	use of camera sys	stems for solving
	Parsing and Compilers	Z,ZK	5
	the knowledge of fundamentals of automata theory, formal language and formal translation theories. Students gain knowledge of		•
	troduced to special applications of parsers, such as incremental and parallel parsing.		
BI-GIT	Version control system GIT	KZ	2
Students will be introduc	ced to basic principles of version control systems. These principles will be then shown on DCVS Git both theoretically and pr	actically. In this pa	articular system
even the implementation	n details will be shown. Students will be challenged to use Git as users, project managers, team leaders as well as Git server	r administrators.	
TV2K1	Physical Education 2	Z	1
BI-TS1	Theoretical Seminar I	Z	4
	ntended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier of the students which want to come in deeper contact with contemporary theoretical computer science with the students which want to come in deeper contact with contemporary theoretical computer science with the students which want to come in deeper contact with contemporary the students which want to come in deeper contact with contemporary the students which want to compute science with the students		
-	and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is b. The capacity is limited by the the potentials of the teachers of the seminar.	s a work with scie	ntific papers and
BI-TS2	Theoretical Seminar II	Z	4
	ntended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classifier the science in the science is a student science with contemporary theoretical computer science.		
	and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is		
other scholarly literature	e. The capacity is limited by the the potentials of the teachers of the seminar.		
BI-TS3	Theoretical Seminar III	Z	4
	ntended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a class		-
-	and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is	s a work with scie	ntific papers and
BI-TS4	e. The capacity is limited by the the potentials of the teachers of the seminar.	Z	Λ
	Theoretical Seminar IV ntended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a cla		4 up. The students
	and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is		
-	e. The capacity is limited by the the potentials of the teachers of the seminar.		-
BI-TDA	Test driven architecture	KZ	4
	on practical examples of how to develop, test, and deploy software with tools like GitLab, Docker, Kubernetes, and more that		
	a strong connection on courses like BI(E)-SI1 and BI(E)-SI2. The main goal of this course is to learn by examples that occur i		-
NI-TSP	Testing and Reliability	Z,ZK	5 with the help of
-	ledge about circuit testing and about methods for increasing reliability and security. They will get practical skills to be able to l zation and to use an ATPG for automatic test generation. They will be able to design easily testable circuits and systems with		-
-	analyze, and control the reliability and availability of the designed circuits.	า อนและการธุกรเษรโ (

BI-CCN Compiler Construction	Z,ZK	5
This is an introductory class on compiler construction for bachelor students in computer science. The goal of the class is to introduce basic principle		-
understand the design and implementation of programming languages. Seeing and actually understanding self-compilation is the overarching theme	-	
BI-TEX TeX and Typography	Z,ZK	4
This course is presented in Czech. This course gives basics of programming in TeX (plain TeX, ConTeXt, LaTeX, OpTeX, LuaTeX). Te second part of	· ·	-
rules.		ontypographic
BI-ULI Introduction to Linux	Z	2
Students become familiar with the basics of the Linux operating system using e-learning form. They learn to work with the command line and become	1 1	
and techniques of a Unix-like system. Topics can be studied first theoretically and then practically verified in a virtual machine (terminal).		
BI-OPT Introduction to Optical Networks	Z,ZK	4
Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on p	1 ' 1	-
of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive componer	-	
dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission sy		-
the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such	,	
ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameter		
from practice.		
NI-VCC Virtualization and Cloud Computing	Z,ZK	5
Students will gain knowledge of architectures of large computer systems that are used in data centers and computer infrastructure of companies an		-
acquainted with virtualization principles, tools and technologies that serve to facilitate and automate configuration, testing and monitoring, and to eff	-	
performance parameters of modern computer systems. Theoretically and practically, they will get acquainted with containerization as the most effect		•
management of complex computer systems and with specific technologies of cloud systems. Finally, they will learn the principles and gain practical ski	ills in the use of mo	dern integration
and development tools (Continuous integration and development).		
BI-VHS Virtual game worlds	ZK	4
The course leads students to create a complex virtual world. The course is a continuation of basic graphical courses (MGA, PGR, BLE,). This current	1 1	e is furthermore
complemented by the theory of game design, principles of writing dialogues and characters in order to create a functional and complex virtual world	. The course can l	be followed by
the course MI-PVR with the task of converting scenes and their dynamics into a fully virtual environment suitable for VR devices.		
BI-VR1 Virtual reality I	KZ	4
Introduction to Virtual Reality (VR), virtual reality operating system and virtual reality creation. Another objective is to meet the rules and requirement	1	-
The course focuses on the ways of teaching using virtual reality technologies and interactive activities in educational virtual 3D worlds. It improves c		
and shared social activities.		3, 4 144 3
BI-VR2 Virtual reality II	KZ	3
Continuation of the course Virtual Reality I. The new course focuses on collaborative telepresence, spatial computing and social life of avatars. The	1	-
for computer science and gamification in various social metaverse and desktop engines.		
BI-VAK.21 Selected Applications of Combinatorics	Z	3
The course aims to introduce students in an accessible form to various branches of theoretical computer science and combinatorics. In contrast to the	. – .	-
issue from applications to theory. Together, we will first refresh the basic knowledge needed to design and analyze algorithms and introduce some b		
with the active participation of students, we will focus on solving popular and easily formulated problems from various areas of (not only theoretical)		
will select problems to be solved will include, for example, graph theory, combinatorial and algorithmic game theory, approximation algorithms, optim	nization and more.	Students will
also try to implement solutions to the studied problems with a special focus on the effective use of existing tools.		
BI-VMM Selected Mathematical Methods	Z,ZK	4
We start reviewing geometric properties of linear spaces with inner product. Next, we introduce and analyze the discrete Fourier transform (DFT) and	d its fast impleme	ntation (FFT).
Further we deal with differential calculus of functions involving multiple variables. We present methods for the localization of extreme values of functi	ons. For this purp	oses, we study
normed linear spaces and quadratic forms. In addition, we introduce the least square method. The last part of the course is devoted to optimization a	nd duality. The line	ar programming
and the Simplex method is analyzed in more detail.		
NI-VYC Computability	Z,ZK	4
Classical theory of recursive functions and effective computability.		
BI-ZS10 Bachelor internship abroad for 10 credits	Z	10
Each student can once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or	research institutio	
internship the Dean of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profes	sional content and	extent of the
internship. Auxiliary courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits	correspond to 4 w	eeks of full-time
employment with a foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided	d into two subjects	if the internship
exceeds the academic year's dead-line.		
BI-ZS20 Bachelor internship abroad for 20 credits	Z	20
Each student can once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or	research institutio	n. Before the
internship the Dean of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profes	sional content and	extent of the
internship. Auxiliary courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits	correspond to 4 w	eeks of full-time
employment with a foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided	d into two subjects	if the internship
exceeds the academic year's dead-line.		
BI-ZS30 Bachelor internship abroad for 30 credits	Z	30
Each student can once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or	research institutio	n. Before the
internship the Dean of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profes		
internship. Auxiliary courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits	-	
employment with a foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided	a into two subjects	it the internship
exceeds the academic year's dead-line.	·	
BI-ZIVS Intelligent Embedded System Fundamentals	KZ	4
Intelligent embedded system fundamentals course is focused on high-level technology embedded systems integrating artificial intelligence. The aim		
modern humanoid robot control and development of applications in a graphical development environment. Lectures provide fundamentals of motion of		
interfaces, robot navigation and development tools. In labs, students program a set of basic task by using the robot simulator and real hardware to g	ei practical experi	ence with these
	1/7	A
BI-ZPI Process engineering	KZ	4
Students will learn fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles learn basics of the used notations (LIML_BPMN_BOPM). The focus in this subject lies in training of practical skills of formalisation and modelling of	-	
learn basics of the used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of CASE tools. The role of process engineering for information systems development is discussed as well as its importance in the overall context of info	-	-
an enterprise.	Simation and DUSI	ness shareyy U
an one-photo.		

BI-ZNF	PHP Framework Nette - basics	KZ	3
Students will gain the ba	asics of PHP framework Nette. They will learn how to practically work with MVP architecture and various libraries of this Czecl	n popular framewo	ork. The resulting
knowledge should serve	e for the efficient creation of a web backend in PHP language.		
BI-ZRS	Basics of System Control	Z,ZK	4
The course gives an int	oduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will for	cus our attention	oarticularly on
control of engineering a	nd physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, descript	ion methods of sy	vstem models,
basic linear dynamic sy	stems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of c	eating a descripti	on of the system
model, the basic linear	dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also give	n to sensors and	actuators in
control loops, issues of	stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industr	ial implementatio	n of continuous
and digital controllers a	nd PLC control.		
BI-IOS	Fundamentals of iOS Application Development for iPhone and iPad	KZ	4
This course is presente	d in Czech.		<u> </u>
BI-ZWU	Introduction to Web and User Interfaces	Z,ZK	4
This course is presente	d in Czech.		
BI-3DT.1	3D Printing	KZ	4
			•

Code of the group: BI-WSI-WI-VO.2017

Name of the group: Elective Vocational Courses for Bachelor Specialisation BI-WSI-WI, Version 2017 Requirement credits in the group:

Requirement courses in the group:

Credits in the group: 0

Note on the group:

Všechny povinné předměty oborů a zaměření s výjimkou tohoto zaměření

Note on the gr	oup: vsechny povinne predmety obor		ii 3 vyjiii	inou ton	oto zamen	5111
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
BI-ADU.1	Unix Administration Zden k Muziká	Z,ZK	5	2P+2C	L	V
BI-ADW.1	Windows Administration Ji í Kašpar, Miroslav Prágl Miroslav Prágl (Gar.)	Z,ZK	4	2P+1C	Z	V
BI-AG2	Algorithms and Graphs 2 Ond ej Suchý	Z,ZK	5	2P+2C	L	V
BI-APS.1	Architectures of Computer Systems Pavel Tvrdík	Z,ZK	5	2P+2C	Z	V
BI-BEK	Secure Code Róbert Lórencz	Z,ZK	5	2P+2C	L	V
BI-HWB	Hardware Security Ji í Bu ek, Filip Kodýtek, Róbert Lórencz Ji í Bu ek Róbert Lórencz (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-JPO	Computer Units Alois Pluhá ek	Z,ZK	5	2P+2C	Z	V
BI-KOM	Conceptual Modelling Marek Suchánek, Robert Pergl Robert Pergl (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-MGA	Multimedia and Graphics Applications	Z,ZK	5	2P+2C	Z	V
BI-OOP	Object-Oriented Programming Filip K ikava Filip K ikava Filip K ikava (Gar.)	Z,ZK	4	2P+2C	Z	V
BI-PGR.1	Computer graphics programming	Z,ZK	5	2P+2C	L	V
BI-PNO	Practical Digital Design Martin Novotný Martin Novotný (Gar.)	KZ	5	2P+2C	Z	V
BI-PRP	Law and business Zden k Ku era, Martin Samek Martin Samek Zden k Ku era (Gar.)	Z,ZK	4	2P+1R	L	V
BI-PJP	Programming Languages and Compilers Jan Janoušek	Z,ZK	5	2P+1C	L	V
BI-PGA	Programming of graphic applications Radek Richtr, Ji í Chludil Radek Richtr Radek Richtr (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-PYT	Python Programming	Z,ZK	4	2P+2C	L	V
BI-SI2.3	Software Engineering 2 Martin Hlavatý Zden k Rybola Martin Hlavatý (Gar.)	Z,ZK	3	2P	Z	V
BI-SP1	Team Software Project 1 Ji í Mlejnek	KZ	4	2C	L	V
BI-SP1.21	Team Software Project 1 Radek Richtr, Marek Suchánek, Michal Valenta, Ji í Chludil, Ji í Mlejnek, Ji í Hunka, Zden k Rybola, Ji í Borský, Jan Matoušek, Zden k Rybola Ji í Mlejnek (Gar.)	ΚZ	5	2C	L	V
BI-SP2.1	Team Software Project 2 Marek Suchánek, Ji í Chludil, Robert Pergl, Marek Skotnica, Ji í Mlejnek, Ji í Hunka, Zden k Rybola, Ji í Borský Ji í Mlejnek Ji í Mlejnek (Gar.)	ΚZ	4	2C	z	V
BI-SSB	System and Network Security Ji í Dostál Ji í Dostál Ji í Dostál (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-SRC	Real-time systems Jaroslav Borecký, Hana Kubátová Jaroslav Borecký Hana Kubátová (Gar.)	KZ	4	2P+2C	Z	V

BI-TIS	Information Systems Design Pavel Náplava Pavel Náplava Pavel Náplava (Gar.)	Z,ZK	5	2P+1C	Z	V
BI-TUR	User Interface Design Jan Schmidt	Z,ZK	4	2P+2C	L	V
BI-VES	Embedded Systems Miroslav Skrbek	Z,ZK	5	2P+2C	L	V
BI-VZD	Data Mining Alexander Kovalenko, Karel Klouda, Ond ej Tichý, Daniel Vašata Daniel Vašata Pavel Kordík (Gar.)	Z,ZK	4	2P+2C	L,Z	V
BI-ZRS	Basics of System Control Kate ina Hyniová	Z,ZK	4	2P+2C	Z	V
BI-ZUM	Artificial Intelligence Fundamentals Pavel Surynek Pavel Surynek (Gar.)	Z,ZK	4	2P+2C	L	V
BI-ZNS	Knowledge-based Systems Marcel Ji ina Marcel Ji ina Marcel Ji ina (Gar.)	Z,ZK	5	2P+2C	Z	V
BI-AG2 This course, presented	Algorithms and Graphs 2 d in Czech, introduces basic algorithms and concepts of graph theory as a follow=up on the	introduction given	in the corr		, ZK	5 t further delv
	I in Czech, introduces basic algorithms and concepts of graph theory as a follow=up on the uctures and amortized complexity analysis. It also includes a very light introduction to appro	•				
BI-ZRS	Basics of System Control	oximation algorithi			.ZK	4 2
-	troduction to the field of automatic control. Students will gain knowledge in this rapidly evol	ving field of great	future. We		' I	•
basic linear dynamic s model, the basic linea	and physical systems. We will provide basic information from the feedback control of linear ystems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. S r dynamic systems analysis and design verification and simple PID feedback, PSD, and fuz f stability in control systems, single and continuous adjustment of the controller parameters	Students will learn t	the method ention is als	ls of creating a so given to ser	description	n of the syste
		s, and certain aspe	ects of the i	ndustriai imple	ementation	or continuou:
and digital controllers :	and PLC control.					
	and PLC control.			Z	ZK	5
BI-ADU.1 Students will learn the between user and adn processes, memory, n	and PLC control.	administration, of	users acce	ples. They will uss rights, file s	understand ystems, dis	sk subsystem
BI-ADU.1 Students will learn the between user and adn processes, memory, n specific examples from BI-ADW.1	and PLC control. Unix Administration internal structure of the UNIX operating system, with the administration of its basic subsystem inistrator roles. They will get theoretical and practical knowledge of user management and etwork services and remote access, and in the areas of system deployment and virtualizati n practice. Windows Administration	administration, of ion. In the labs, the	users acce	ples. They will uss rights, file s y the knowledg	understand ystems, dis	the difference k subsystem
BI-ADU.1 Students will learn the between user and adn processes, memory, n specific examples from BI-ADW.1	and PLC control. Unix Administration internal structure of the UNIX operating system, with the administration of its basic subsystem inistrator roles. They will get theoretical and practical knowledge of user management and etwork services and remote access, and in the areas of system deployment and virtualization practice.	administration, of ion. In the labs, the	users acce	ples. They will uss rights, file s y the knowledg	understand ystems, dis je from the	the differend sk subsyster lectures on

BI-APS.1 Architectures of Computer Systems

Z,ZK Students will learn the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Special emphasis is given on the pipelined instruction processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the principles of instruction processing not only in scalar processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the sequential model of programs. The course further elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and consistency in such systems. **BI-BEK** Secure Code Z,ZK 5 The students will learn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting familiar with the threat modeling

5

5

Z,ZK

theory, students gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every program needs to run with administrator privileges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing data and the relationships of security and database systems, web, remote procedure calls, and sockets in general. The module concludes with Denial of Service attacks and the defense against them.

BI-HWB Hardware Security Z.ZK 5 The course deals with hardware resources used to ensure security of computer systems including embedded ones. The students become familiar with the operating principles of cryptographic modules, the security features of modern processors, and storage media protection through encryption. They will gain knowledge about vulnerabilities of HW resources, including side-channel attacks and tampering with hardware during manufacture. Students will have an overview of contact and contactless smart card technology including applications and related topics for multi-factor authentication (biometrics). Students will understand the problems of effective implementation of ciphers.

BI-JPO Computer Units Students deepen their basic knowledge of digital computer units acquired in the obligatory course of the program (BIE-SAP), get acquainted in detail with the internal structure and organization of computer units and processors and their interactions with the environment, including accelerating arithmetic-logic units and using appropriate codes for implementation of multiplication. The organization of main memory and other internal memories (addressable, LIFO, FIFO and CAM) will be discussed in detail, including codes for error detection and correction for parallel and serial data transmissions. They will also get acquainted with the methodology of controller design, with the principles of communication of the processor with the environment and the architecture of the bus system. The problems will be practically evaluated in the labs and with the help of the educational microprogrammed processor simulator and programmable hardware design kits (FPGA).

BI-KOM Conceptual Modelling

The course is focused on developing abstract thinking and precise formulation skills using conceptual models. Students learn skills of discerning key terms in a domain, the ability to categorize and specify correct relations in complex systems of social reality, mostly enterprises and institutions. Students learn basics of ontological structural modeling in the OntoUML notation. Next, they learn how to express business rules and constraints using the OCL language and foundations of OWL/RDF semantic data representation in the Internet. They also learn the foundations of enterprise engineering, being a discipline for conceptual modelling of enterprises and institutes and their processes. The DEMO method and the BPMN notation will be taught. The course is designed with the respect to continuation in software implementations.

•					
BI-MGA	Multimedia and Graphics Applications	Z,ZK	5		
Students get acquainted	d with multimedia technologies and applications for 2D/3D bitmap and vector graphics. During the course, current tools for we	orking with image	s, videos, 3D		
graphics and animation	graphics and animation will be introduced. Students learn several basic techniques of creation and editing content in computer graphics, introduction to graphic formats, and compression				
technologies. They learn to use multimedia transmission and representation systems, including real-time multimedia processing. They understand the principle of operation and use					
of graphics processing cards. They gain a number of practical skills, such as vectorizing raster images, retouching photos, or creating 3D models.					
BI-OOP	Object-Oriented Programming	Z,ZK	4		

Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns.

			· · · · · · · · · · · · · · · · · · ·
BI-PGR.1	Computer graphics programming	Z,ZK	5
	bgram a simple interactive 3D graphical application like a computer game or scientific visualisation, to design the scene, add t		-
	surface, wood, sky), and set up the lighting. At the same time, they understand the fundamental principles and terms used in		
	ietric transformations, or lighting model. They gain knowledge allowing orientation in computer graphics, and representing solid PU programming and animations. They get used to techniques utilised in geometric modelling, modelling of curves and surfa		
BI-PNO		KZ	5
	Practical Digital Design with the practical skills to use synchronous design techniques. They understand we are the practical skills to use synchronous design techniques.	1	1
-	hnologies FPGA and ASIC. Students demonstrate practical use of the design techniques in the module project sing modern,		
tools.			a crib accigit
BI-PJP	Programming Languages and Compilers	Z.ZK	5
	nethods of implementation of common high-level programming languages. They get experience with the design and impleme	1 '	-
	ng language: data types, subroutines, and data abstractions. Students are able to formally specify a translation of a text that		
form and write a compil	er based on such a specification. The notion of compiler in this context is not limited to compilers of programming languages	, but extends to al	l other programs
for parsing and process	ing text in a language defined by a LL(1) grammar.		
BI-PGA	Programming of graphic applications	Z,ZK	5
This course is presented	d in Czech only.		
BI-PYT	Python Programming	Z,ZK	4
The course is taught in	Czech.		
BI-SI2.3	Software Engineering 2	Z,ZK	3
This course is presented	d in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BI-SP1	Team Software Project 1	KZ	4
Students gain hands-on	experience with the analysis, design, and prototyping of a large-scale software system. Theoretical support is provided by the	he BEI-SWI cours	e that runs
	aches the necessary techniques and theory. Teams consisting of 4-6 students will work on a specific project. The teacher, in		
	ts with the team (at the seminars) with respect to both the formal and material aspects of the design. The resulting work will I	pe further develop	ed and finished
in the BEI-SP2 course.			
BI-SP1.21	Team Software Project 1	KZ	5
e e	experience with the analysis, design, and prototyping of a large-scale software system. Theoretical support is provided in the		
-	aches students necessary techniques and principles. Teams consisting of 4-6 students will work on a specific project. The te		
and finished in the BIE-	consults with the team (at the seminars) both the formal and material aspects of the software design. The resulting software	antelact will be it	inther developed
BI-SP2.1	Team Software Project 2	KZ	4
	d in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).	r\Z	4
BI-SSB		Z,ZK	5
	System and Network Security on selected areas of computer networks and computer systems in terms of cyber security	ζ_Γ	5
BI-SRC	Real-time systems	КZ	4
	ic knowledge in the Real-time theory and in the design methods for RT systems including the dependability issues. Theretick	1	
	on the practical labs of the Department of Digital Design. This subject is mainly based on embedded R-T systems, therefore	-	
as in BI-VES subject an		0	
BI-TIS	Information Systems Design	Z,ZK	5
-	types of ISs and their practical implementation aspects and are able to match the needs of different market segments (custo		ations of existing
technologies (database	s, programming languages, GUI etc.).		
BI-TUR	User Interface Design	Z,ZK	4
Students have a basic of	bverview of the methods for designing and testing common user interfaces. They have experience to solve the problems whe		ther products do
not communicate with th	ne user optimally, since the needs and characteristics of users are not taken into account during product development. Studen	ts gain an overvie	w of the methods
that bring users into the	development process to ensure optimal communication with a user.		
BI-VES	Embedded Systems	Z,ZK	5
Students learn to desigr	embedded systems and develop software for them. They get basic knowledge of the most common microcontrollers and emb	edded processors	s, their integrated
	ramming methods, and applications. They get practical skills with development kits and tools.		
BI-VZD	Data Mining	Z,ZK	4
	to the basic methods of discovering knowledge in data. In particular, they learn the basic techniques of data preprocessing, n		
	data transformation, and fundamental principles of knowledge discovery methods. Students will be aware of the relationships		
	ntals of assessing model quality. Data mining software is extensively used in the module. Students will be able to apply basic	data mining tools	to common
problems (classification		7 71/	4
BI-ZUM	Artificial Intelligence Fundamentals	Z,ZK	-
	I to the fundamental problems in the Artificial Intelligence, and the basic methods for their solving. It focuses mainly on the clasent systems, game theory, planning, and machine learning. Modern soft-computing methods, including the evolutionary algority		
be presented as well.	she systeme, game areary, planning, and machine loarning, modern son-compaining methods, including the evolutionally algori		
BI-ZNS	Knowledge-based Systems	Z,ZK	5
	miliar with the systems based on knowledge (knowledge-based systems), which are systems that usetechniques of artificial		-
	it, learning and reasoning from findingsand actions. The course introduces students to the philosophy and architecture of know	-	-
	inning. The course assumes knowledge of set theory, probability theory, artificial neural networks, and evolutionary algorithm		
•			

List of courses of this pass:

Code	Name of the course	Completion	Credits
BI-3DT.1	3D Printing	KZ	4

	English language, preparation for the B2 level exam	Ζ	2		
	course corresponds to the preparation for the English exam at the B2 level. Requirements for course credit. Academic Achievement				
active part in the language instructionMeet the requirements for writing assignments - Summary, Abstract, Argumentation PaperSucceed in both the midterm and the final term tests with the success rate set at 70%80% and over in BOTH tests means ORAL EXAM ONLY (no written part). Requirements will be specified by individual teachers during the first					
	class of the term.		ing the mot		
BI-AAG	Automata and Grammars	Z,ZK	6		
	uced to basic theoretical and implementation principles of the following topics: construction, use and mutual transformations of finite	1 '			
	ars, translation finite automata, construction and use of pushdown automata, hierarchy of formal languages, Relationships between fo	-	-		
Knowledge acquir	ed through the module is applicable in designs of algorithms for searching in text, data compression, simple parsing and translation,	and design of digi	tal circuits.		
BI-ACM	Programming Practices 1	KZ	5		
	This course is presented in Czech.	1	1		
BI-ACM2	Programming Practices 2	KZ	5		
	This course is presented in Czech.		-		
BI-ACM3	Programming Practices 3	KZ	5		
BI-ACM4	This course is presented in Czech.	KZ	F		
	Programming Practices 4 This course is presented in Czech.		5		
BI-ADU.1	Unix Administration	Z,ZK	5		
	he internal structure of the UNIX operating system, with the administration of its basic subsystems and with the security principles. They	1 '	-		
	Idministrator roles. They will get theoretical and practical knowledge of user management and administration, of users access rights,				
processes, memo	ry, network services and remote access, and in the areas of system deployment and virtualization. In the labs, they will verify the kn	owledge from the l	ectures on		
	specific examples from practice.				
BI-ADW.1	Windows Administration	Z,ZK	4		
	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		1		
BI-AG1	Algorithms and Graphs 1	Z,ZK	6		
	s the basics of efficient algorithm design, data structures, and graph theory, belonging to the core knowledge of every computing cu				
	ledge from the course BI-DML.21, in which students acquire the knowledge and skills in combinatorics necessary for evaluating the		mplexity of		
BI-AG2	rithms. The course also follows up knowledge from BI-MA1.21, the practical usage of asymptotic mathematics, in particular, the asymptotic mathematics and Graphe 2	Z,ZK	5		
	Algorithms and Graphs 2 ted in Czech, introduces basic algorithms and concepts of graph theory as a follow=up on the introduction given in the compulsory c	1 '	-		
	structures and amortized complexity analysis. It also includes a very light introduction to approximation algorithms. For English versi				
BI-ALO	Algebra and Logic	Z,ZK	4		
	The course extends and deepens the study of topics touched upon in the basic course in logic.	, ,	I		
BI-AND.21	Programming for the Android Operating System	KZ	4		
'	This course is presented in Czech.	•	1		
BI-ANG	English Language, Internal Certificate	ZK	2		
			. –		
	Course information and teaching materials can be found at https://moodle-vyuka.cvut.cz/course/search.php?search=BI-AN	İG	і Т		
BI-ANG1	English Language Examination without Preparatory Courses	ig Z,ZK	2		
BI-ANG1 BI-APJ	English Language Examination without Preparatory Courses Aplication Programming in Java	İG	і Т		
BI-APJ	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java.	ig Z,ZK Z,ZK	2 4		
BI-APJ BI-APS.1	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems	G Z,ZK Z,ZK Z,ZK	2 4 5		
BI-APJ BI-APS.1 Students will lear	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spec	IG Z,ZK Z,ZK Z,ZK cial emphasis is giv	2 4 5 ven on the		
BI-APJ BI-APS.1 Students will learn pipelined instruction	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spect In processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the principles of internal will understand the basic concepts of RISC and CISC architectures and the principles of Internal architectures and the principles of RISC and CISC architectures and the p	G Z,ZK Z,ZK Z,ZK cial emphasis is giv ciples of instructior	2 4 5 ven on the processing		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pro	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spec	G Z,ZK Z,ZK Z,ZK cial emphasis is giv ciples of instruction sequential model of	2 4 yen on the processing of programs.		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pro	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen In processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin occessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and	G Z,ZK Z,ZK Z,ZK cial emphasis is giv ciples of instruction sequential model of	2 4 yen on the processing of programs.		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pr The course further BI-ARD	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Specific processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin ocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the	CG	2 4 sen on the processing of programs. ch systems. 4		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pro- The course further of BI-ARD The subject is desig kits and control va	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded systems	Z,ZK Z,ZK Z,ZK cial emphasis is giviciples of instruction sequential model of consistency in surface of the systems, i.e. to see	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pro- The course further of BI-ARD The subject is desig kits and control va	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Specific processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin cocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy or of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore	Z,ZK Z,ZK Z,ZK cial emphasis is giviciples of instruction sequential model of consistency in surface of the systems, i.e. to see	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pro- The course further of BI-ARD The subject is desig kits and control va not only on displa	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded systems y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students.	CALC Construction Call emphasis is given ciples of instruction sequential model of consistency in sur- d consistency in sur- kZ tions for modern pro- systems, i.e. to see is suitable even fo	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pri- The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded systems for artist performance and therefore Software Engineering students. Algorithms visually	Z,ZK Z,ZK Z,ZK cial emphasis is given the construction sequential model of consistency in surface of the consistency in surface of the consistency in surface of the consistency in surface of the construction sequential model of the consistency in surface of the construction of the con	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course completed	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of consistency in surface of the systems, i.e. to see is suitable even for a suitable ev	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course completed	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so id in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org&	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of consistency in surface of the systems, i.e. to see is suitable even for a suitable ev	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so that make understanding the principles of algorithms easy.	G Z,ZK Z,ZK Z,ZK Z,ZK Z,ZK Z,ZK Z,ZK Z,Z	2 4 5 ven on the n processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>)		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin ocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer sof d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis	IG Z,ZK Z,ZK cial emphasis is given the second sequential model of the second sequential model of the consistency in surface of the second sec	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so that make understanding the principles of algorithms easy.	IG Z,ZK Z,ZK cial emphasis is giv ciples of instructior sequential model of d consistency in su KZ tions for modern pro- systems, i.e. to see is suitable even fo Z,ZK cience that extend s lt;http://www.algovis Z Z,ZK	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lear	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Specific processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin ocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code	IG Z,ZK Z,ZK cial emphasis is given that is the sequential model of the sequential model of the consistency in suremedy and the sequential model of the consistency in suremedy and the sequential model of the sequential model of the consistency in suremedy and the sequential model of the constraint of the sequential model of the constraint of the	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 seat modeling		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer sc d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting fa gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every leges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing	IG Z,ZK Z,ZK cial emphasis is given instructor sequential model of consistency in surface of the systems, i.e. to see is suitable even for modern processes and the systems, i.e. to see is suitable even for Z,ZK Ciance that extend so its its its its its its its its its its	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 eat modeling o run with onships of		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spen processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin processors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer sc d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting fa gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every leges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing latabase systems, web, remote procedure calls, and sockets in gene	IG Z,ZK Z,ZK cial emphasis is given instructor sequential model of consistency in surface of the systems, i.e. to see is suitable even for modern prosperems, i.e. to see is suitable even for Z,ZK Cience that extend so it, it, it, it, it, it, it, it, it, it,	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 eat modeling o run with onships of them.		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of BI-BEZ	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spei processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin coessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer s that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them tinto account in the design phase of their own code and solutions. After getting fa gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every teges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing tatabase systems, web, remote procedure calls, and sockets in general. The module concludes with Denial of Service attacks and th Security	IG Z,ZK Z,ZK cial emphasis is given instructor sequential model of donsistency in surface of the systems, i.e. to see is suitable even for modern prospeters, i.e. to see is suitable even for Z,ZK cial emphasis is given in the systems, i.e. to see is suitable even for modern prospeters, i.e. to see is suitable even for Z,ZK cience that extend so it, it, it, it, it, it, it, it, it, it,	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 sat modeling o run with onships of them. 6		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri- The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of BI-BEZ Students understand	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spe processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin ocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ired peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer s that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting f gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every leges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing fatabase systems, web, remote procedure calls, and sockets in general. The module concludes with Denial of Service attacks and th Security	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of donsistency in surface of the systems, i.e. to see is suitable even for modern prospeters, i.e. to see is suitable even for Z,ZK Cial Experimentation of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the system of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the system of the systems of the system	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 eat modeling o run with onships of them. 6 ptosystems,		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri- The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of BI-BEZ Students understand	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spe processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin coessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer sc d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting f gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every leges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing tatabase systems, web, remote procedure calls, and sockets in general.	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of donsistency in surface of the systems, i.e. to see is suitable even for modern prospeters, i.e. to see is suitable even for Z,ZK Cial Experimentation of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the system of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the system of the systems of the system	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 eat modeling o run with onships of them. 6 ptosystems,		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of BI-BEZ Students understand and hash functions.	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spee processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students will understand the basic concepts of RISC and CISC architectures and the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students will help of available libraries. The goal of the subject is to show varied software approaches to control embedded systems. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so Goftware Engineering students. Algorithms visually Bachelor Thesis Secure Code arn how to assess security risks and how t	IG Z,ZK Z,ZK cial emphasis is giviciples of instructior sequential model of d consistency in surface of the consistency in surface of the consistency in surface of the constructions for modern processes is suitable even for the construction of the constructine of the construction of the construction of the const	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 sat modeling r un with onships of them. 6 ptosystems, ier systems.		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri- The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of BI-BEZ Students understand	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spe processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin coessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer sc d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting f gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every leges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing tatabase systems, web, remote procedure calls, and sockets in general.	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of donsistency in surface of the systems, i.e. to see is suitable even for modern prospeters, i.e. to see is suitable even for Z,ZK Cial Experimentation of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the system of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the systems of the system of the systems of the system	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 eat modeling o run with onships of them. 6 ptosystems,		
BI-APJ BI-APS.1 Students will learn pipelined instructior not only in scalar pri The course further of BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and of BI-BEZ Students understand and hash functions.	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spentocosting and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple application to embedded systems. Students will learn how to design simple application software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting factabase systems, web, remote procedure calls, and sockets in general. The module concludes with Denial of Service attacks and the security of current cryptographic algorithms and applications: symmetric. They also learn the fundamentals of securing and The security, the fundamentals of designing and using modern cryptographic printives and systems that are based on these primitives. <	IG Z,ZK Z,ZK cial emphasis is giviciples of instructior sequential model of d consistency in surface of the consistency in surface of the consistency in surface of the constructions for modern processes is suitable even for the construction of the constructine of the construction of the construction of the const	2 4 5 ven on the processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 sat modeling r un with onships of them. 6 ptosystems, ier systems.		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complete knowledge presente BI-BAP BI-BEK The students will lear theory, students administrator privit security and co BI-BEZ Students understant and hash functions. BI-BIG BI-BLE	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. ArChitectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spee processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin ocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicatireid peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded sy of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer so that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security r	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of donsistency in surface of the sequential model of donsistency in surface of the sequential model of the systems, i.e. to see is suitable even for Z,ZK cial emphasis is given in the sequential model of donsistency in surface of the sequential model of the systems, i.e. to see is suitable even for Z,ZK Z,ZK z,ZK amiliar with the three of the defense against is and the relation of the defense against is z,ZK and asymmetric crysystems for compute KZ KZ Z,ZK	2 4 5 ven on the p processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 sat modeling or un with onships of them. 6 ptosystems, ter systems. 4		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and c BI-BEZ Students understand and hash functions. BI-BIG BI-BLE The course extend animation. It o	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems n the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spee processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin cocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer s d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bz Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting fa gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since not every leges. Dangers inherent in buffer overflows will be practically demonstrated. Students will be introduced to the principles of securing database systems, web, remote procedure calls, and sokets in general.	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of donsistency in surface of the sequential model of donsistency in surface of the sequential model of the systems, i.e. to see is suitable even for a systems, i.e. to see is suitable even for Z,ZK Z,ZK Z,ZK Z,ZK amiliar with the three of the defense against is and asymmetric crysystems for computed in 3D gradient is a symmetric crysystem in the section of the defense against is a symmetric crysystem is for computed in the section of the donal crystem is a symmetric crysystem is for computed in the section of the donal crystem is for computed in the section of the donal crystem is for computed in the section of the systems is a symmetric crysystem is for computed in the section of the systems is a symmetric crysystem is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the system is for the system is for computed in the section of the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is (a system is for the system is (a system is	2 4 5 ven on the p processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 at modeling or un with onships of them. 6 ptosystems, ter systems. 4 aphics and		
BI-APJ BI-APS.1 Students will learn pipelined instruction not only in scalar pri The course further BI-ARD The subject is desig kits and control va not only on displa BI-AVI.21 The course complet knowledge presente BI-BAP BI-BEK The students will lea theory, students administrator privi security and c BI-BEZ Students understand and hash functions. BI-BIG BI-BLE The course extend	English Language Examination without Preparatory Courses Aplication Programming in Java This course is presented in Czech. Advanced technologies in Java. Architectures of Computer Systems In the construction principles of internal architecture of computers with universal processors at the level of machine instructions. Spent processing and on the memory hierarchy. Students will understand the basic concepts of RISC and CISC architectures and the prin cocessors, but also in superscalar processors that can execute multiple instructions in one cycle, while ensuring the correctness of the elaborates the principles and architectures of shared memory multiprocessor and multicore systems and the memory coherence and Interactive applications on Arduino ned for students of first grade of bachelor study as introduction to embedded systems. Students will learn how to design simple applicat ried peripherals with help of available libraries. The goal of the subject is to show varied software approaches to control embedded s y of a PC. Thanks to possible control on higher (objective) layer, this platform is frequently used for artist performance and therefore Software Engineering students. Algorithms visually ments other algorithm courses at FIT. It brings knowledge about particular important algorithms from different fields of the computer st d in BI-AG1 and BI-AG2. A wide scope of covered subject is made possible due to using visualization bx Algovision (www.algovision.org& that make understanding the principles of algorithms easy. Bachelor Thesis Secure Code arn how to assess security risks and how to take them into account in the design phase of their own code and solutions. After getting fi gain practical experience with running programs with reduced privileges and methods of specifying these privileges, since on every leges. Dangers inherent in buffer overptography and have an overview of current cryptographic algorithms and applications: symmetric: They also learn the fundamentals of cryptography	IG Z,ZK Z,ZK cial emphasis is given instruction sequential model of donsistency in surface of the sequential model of donsistency in surface of the sequential model of the systems, i.e. to see is suitable even for a systems, i.e. to see is suitable even for Z,ZK Z,ZK Z,ZK Z,ZK amiliar with the three of the defense against is and asymmetric crysystems for computed in 3D gradient is a symmetric crysystem in the section of the defense against is a symmetric crysystem is for computed in the section of the donal crystem is a symmetric crysystem is for computed in the section of the donal crystem is for computed in the section of the donal crystem is for computed in the section of the systems is a symmetric crysystem is for computed in the section of the systems is a symmetric crysystem is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the section of the system is for computed in the system is for the system is for computed in the section of the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is for the system is (a system is for the system is (a system is	2 4 5 ven on the p processing of programs. ch systems. 4 ogrammable the results r Web and 4 substantially sion.org>) 14 5 at modeling or un with onships of them. 6 ptosystems, ter systems. 4 aphics and		

BI-CAO	Digital and Analog Circuits	Z,ZK	5
Students get the	fundamental understanding of technologies underlying electronic digital systems. They understand the basic theoretical models and	principles of functi	onality of
transistors, gates, o	circuits, and conductors. They are able to design simple circuits and evaluate circuit parameters. They understand the differences betw	veen analog and di	gital modes
	of electronic devices.		
BI-CCN	Compiler Construction	Z,ZK	5
	uctory class on compiler construction for bachelor students in computer science. The goal of the class is to introduce basic principles ind the design and implementation of programming languages. Seeing and actually understanding self-compilation is the overarching	•	
BI-CS1		KZ	<u> </u>
	Programming in C# urse is to introduce .NET Framework as a multi-language development platform. Then, programming language C#, its fundamental cc		
-	s, loops, definitions and calls of functions will be discussed. Attention is focused on the object oriented programming in C# - class def		
	ods, properties, static members, Garbage Collector, inheritance and polymorphism, collections, delegates, and generics. Debugging		-
	well as work with files are emphasized.		
BI-CS2	C# language and data access	KZ	4
	and data access course objective is to introduce students several data access technologies - database, XML, NoSQL - on the Micros		
• ,	is used to retrieve data - Connection, Command, Data Reader and DataAdapter v ADO.NET. Next, they will learn to use current techn	•	
-	rying and updating data, integrated directly with the .NET platform languages, which enable LINQ use with Objects, XML and SQL (L)). Another objective is the Entity Framework - an object-relational mapper that enables .NET developers to work with relational data u	-	
	f the course introduces Code First, Database First, Model First approaches. The students will also get to know the Conceptual Model		-
(- , -]	(XML description).	,	5 11 5
BI-CS3	Language C# - design of web applications	KZ	4
The students will be	introduced to current technologies in web application development on the .NET platform. They will acquire a comprehensive overview of	of the development	possibilities
	on thisplatform. They will learn to create WebAPI and to use it by client programs.		
BI-DAN	Taxes for non-Economists	Z,ZK	4
-	cial insurance contributions, are obligatory payments paid by people or institutions to public budgets. This is the way how a significant p		
	ns who pays which taxes or who bears the tax burden. The course introduces students to the tax theory and policy fundamentals and a nption, and wealth. The course provides practical information on calculations of tax liabilities of both citizens and institutions as well a		
or income, consur	taxpayers' formal duties towards public administration.	s information abou	timportant
BI-DBS	Database Systems	Z,ZK	6
	oduced to the database engine architecture and typical user roles. They are briefly introduced to various database models. They lear		-
(including integrity	constraints) using a conceptual model and implement them in a relational database engine. They get a hands-on experience with the	SQL language, as	well as with
	lation - the relational database model. They learn the principles of normalizing a relational database schema. They understand the funda	-	
	lling parallel user access to a single data source, as well as recovering a database engine from a failure. They are briefly introduced t		-
in relational databa	ases with respect to speed of access to large quantities of data. This introductory-level course does not cover: Administration of data	base systems, debi	ugging and
BI-DPR	optimizing database applications, distributed database systems, data stores. Document., Presentation, Rhetorics	KZ	4
	d to the professional communication and writing of the scientific texts (bachelor's and diploma thesis). Students will learn to create and pr	I I	-
	and presenting before an audience. Students will also learn to write technical reports and scientific texts.		
BI-EHD	Introduction to European Economic History	Z,ZK	3
	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BI-EJA	Enterprise Java	Z,ZK	4
The course is on a	dvanced technologies in the Java programming language. The focus is on technologies for development of enterprise information system a database and are accessed through the web interface.	stems which are co	onnected to
BI-EMP		KZ	4
	Economics and Management Principles ned to fundamental problems of business, specifically with	I I	•
	nto state economic environment (CR), management of property and capital structure, business transaction records keeping during a	-	
	between business production and costs, evaluation of enterprise financial health and business rehabilitation or termination	I.	
BI-EP1	Effective programming 1	Z	4
	The course is taught in Czech.		
BI-EP2	Efficient Programming 2	KZ	4
Continuation of El	ficient Programming 1. Students will practice implementation of algorithms by solving typical problems. Various ways of solving individual and a state of	dual problems are	discussed,
	with the aim to choose the best one and avoid implementation errors.	771	~
BI-FMU	Financial and Management Accounting rse is explanation of basic terms in the theory of accounting, the principles of balancing the property amounts and liabilities in the pa	Z,ZK	5
	unts and accounting statements including opening and closing of bookkeeping. The course provides students with a legal modificatio	-	-
	rations based on current methods of double-entry bookkeeping for enterprising subjects in the Czech Republic. Principles of manager	1 0,	
	Business Inteligence moduls in Business information systems.		
BI-FTR.1	Financial Markets	Z,ZK	5
	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BI-GIT	Version control system GIT	KZ	2
	troduced to basic principles of version control systems. These principles will be then shown on DCVS Git both theoretically and pract mplementation details will be shown. Students will be challenged to use Git as users, project managers, team leaders as well as Git s		-
BI-HAM	HW accelerated network traffic monitoring	KZ	4
	duces students to modern and widely used technologies and principles in the area of network infrastructure and traffic monitoring. The	I I	
	mandatory skills to network operators (planning and development of resources and infrastructure) and security analysts alike (as a s		
	oals of the course are to acquaint students with the modern trends and cornerstone principles in the area of monitoring network traffi		
	level and to develop their practical abilities in this field.		
BI-HMI	History of Mathematics and Informatics	Z,ZK	3
	This course is presented in Czech.	7 71/	F
BI-HWB The course deal	Hardware Security s with hardware resources used to ensure security of computer systems including embedded ones. The students become familiar wit	Z,ZK	5 nciples of
	ules, the security features of modern processors, and storage media protection through encryption. They will gain knowledge about vi		-

Bit-IOS Fundamentals of IOS Application Development for Phone and IPad KZ 4 Bit-IPO Increase is presented in Crean Comparent IDE-SOP, per sequented leads with the intermal structure and comparent IDE-SOP, per sequented leads with the intermal structure and comparent IDE-SOP, per sequented in an activity as provide in an activity as provide in an activity as provide intermediate intermal intermal and the intermal structure and comparent IDE-SOP, per seqUence IDE-S	including side-char	anel attacks and tampering with hardware during manufacture. Students will have an overview of contact and contactless smart card tec and related topics for multi-factor authentication (biometrics). Students will understand the problems of effective implementation of		applications
Bit JPO Computer Units ZZK 5 Buscers deeper her has browledge of dijstic compare visits and processors and their interactions with the enrichment, including accentration, unit interactions of the processor with the enrichment and their interactions of the processor with the enrichment and their interactions and their interactions of the processor with the enrichment and their interactions and their interactions of the processor with the enrichment and their interactions of the processor with the enrichment and their interactions and the processor with the enrichment and their interactions and the processor with the enrichment and their interactions and the processor with the enrichment and their interactions and the processor with the enrichment and their interaction and their interaction interaction processor with the enrichment and their interaction and their interaction and their interaction interaction and their interactions and their interactions. Nat, they issue and enrichment and their interactions and their interactions and their interactions and their interactions. The their interaction in complex system of a contain and their interactions. The their interaction is the interaction and their interactions. The their interactions and their interactions and their interactions. The their interaction and their interactions and their interactions. The their interaction and their interactions and their interactions. The their interaction and their interactions and their interactions. The their interaction in complex system of a contain and their interactions. The their interaction in complex system and contain and their interactions. The their interaction and their interactions and their interactions. The their interaction in the interaction and their interactions. The their interaction and their interactions and their interactions. The interactins and their interactions and their interactins and thein	BI-IOS	Fundamentals of iOS Application Development for iPhone and iPad		4
Budents despending in thesis threading of dipide compared in the skippung cause of the program (BE-SAP) and CAM) will be discussed in deskip interpreter atom of mutipation. The organization of mutipation constraints with the molecular dipide transmission and the program (BE-SAP) and CAM) will be discussed in deality including coole the rest detection and the interpreter atom of mutipation. The organization of mutipation constraints of the interpreter atom of mutipation. The organization of the interpreter atom constraints of the molecular discussed in the high of the discussed in deality including coole the rest detection atom of mutipation. The organization of the interpreter atom constraints of the discussed in deality including coole the rest detection atom of the discussed in deality including a distribute of the observation of the discussed in deality including coole the rest detection atom of the discussed in deality including coole that and the inclusses. The DLMO mutication is a distribute of the OBM distribute of the observation of the discussed in deality including coole that and the inclusses. The DLMO method and is constraints on the discussed in the discussed in deality including cool that and the inclusses of mutications in a distribute atom of the standard of the discussed in deality including cool that and the inclusses of the distribute atom of the standard of the distribute atom cool the standard of the distribute atom of the standard of the distribute atom cool the standard of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute atom (and the inclusion of the distribute) d	BI-JPO		Z.ZK	5
or multiprices in regarization of main menory and one internal memories (addressede, LFC) FIP and CAM) will be discussed in deal interviews of term descend on addressential methods and such at the interviews of administration of the processor will be programmed by and with the lab and with the				ucture and
caracterior parallel and saved after transmissions. They will also grid acquirated with the methodsky of controller design, with the principles of control caracterior and programmation hardware design kin (FPA). BHCOM Concreptual Modelling Z.ZK 5 BHCOM Concreptual Modelling Z.ZK 4 Kithi is a rodinative state of the base variety state of the discussion in antibage at antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathem State) of instaggiest antibual modelling in the Diruktion (State Mathematika) (State M	organization of cor	nputer units and processors and their interactions with the environment, including accelerating arithmetic-logic units and using approp	oriate codes for imp	lementation
the evidence and the architecture of the bus system. The problems will be practically evaluated in the laba and with the leads of the architecture of the educational microgrogrammed processos immulator and programmed burknesses educations (in PGPA). ENCOM Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Modelling Conceptual Con			-	
BH-ROM Conceptual Modelling Z.ZK 5 The course is locused on developing abstract thinking and precise formulator ability using conceptual models. Students larm studies of ontacipical structural models in the downlations. The students and the approximation is a down any model of modelling and the linking of the course is a downlating and the locus of the course larm constructure and the students and the approximation. The linking in the CML linking of metry metry and increases. The DAM method and the BMM students and the approximation in a downlating and the approximation in a downlating and the approximation in a downlating and the approximation in a downlating and the approximation and the approximation in a downlating and the approximation and the approximation in a downlating and the approximation and the approximatin the approximatin the approximation and the appro			-	
BH-KOM Conceptual Modelling 2.ZK 5 The course is because of models and executing advances for marking and executing models and the services and specify correct relations in complex system of social reality, marky enterprises and institutions. Students learn basics of ontologist mutual modeling in the Direct/ULL 5 Mark Direct Correct relations in complex system of social reality, marky enterprises and institutions of OW-HCP transmittic data regreemation. In thermset, they addicate the conceptual modeling of metaprises and metalities and their processes. The DEMM metatod and the DEMM metatod and the system of the social system of the social system of the social system. The respect to continuations of OW-HCP transmittations. The device of advanced language constructions. The the space for the system of the stage of the social system of the social system of the social system. The social system of the social system of the social system of the social system. The social system of the social system of the social system of the social system of the social system of the social system. The social system of the social syst	the environment ar		ogrammed process	or simulator
The ocurse is tocaled on developing abstract thinking and precise formulation wills using conceptain readets. Students and makes do intological structures of the Oncol ML analysis of the ocurse is descenting by and the instead of the Oncol ML analysis of the Oncol ML ana	BI-KOM		7.7K	5
nation. Next, they karn how begress busines nueses and constaints using the OCL language and foundation of OVU/DPC semanic dash representation in the intermet. They also the method of entropies anginearing, being a discipling of entropies and institutions and they PMN interestion will be staged with the respect to continuation in software implementations. BH-KOT Programming in Kollin Frogramming in Kollin Frograming in Kollin Frogramming in Kollin Frogrammi				
Bite mutualities of enterprise engineering, being a discible for conceptual modeling of enterprises and instructs and their processes. The DEMO method and the BPEM installing of enterprises and instructions instruction instruction instruction instruction instruction instruction. CZ_X 4 Bit KOT Programing in Kotin Z_ZK 4 Z_ZK 4 Bit KOT Section is a model or designed cook in a suitable of designed cook in a suitable of designed CSL. Z_ZK Z X Z				
Bit KOT Programming in Kolin Bit KOT Programming in Kolin ZZK 4 Kolin is a modern, statically-shyled object functional language that exploits the asternise Java language acosystem while delivering a number of advanced language constructions. ZZK 4 Bit KSA Cultural and Social Pathtopology ZK 2 The one-semester course aims to acquairs taddens with the basics of assign and Social Anthropology is a scientific discipline dealing with they adversity of the work - examples from our exote* circums (prostering hings, region, casa) estatistical ourse, instead of usure, language. ZZK 7 The conserve term of the our exote* circums (prostering hings, region, casa) estatistical on, material culture, language and workey of the work - examples from our exote* circums (prostering hings, region, casa) estatistical protopolicy ZZK 7 The course is presented in Czech. Suddens understand the theoretical boundation of algebra and mathematical principles of linear anautoris, where the dependenties and linear science is analytic geometry. They understand the end-exited material and the protopolicy ZZK 4 Bit-MEX Macroreoeconomic Context of Domestic and Worker Genomy ZZK 4 Bit-MEX Macroreoeconomic Context of Domestic and Worker Genoting in definition of the outpering mathematical principles on advance genotic mathematical principles on advance genot definition analytis advance is presented in Casch.<	notation. Next, they	r learn how to express business rules and constraints using the OCL language and foundations of OWL/RDF semantic data represent	tation in the Interne	t. They also
Bi-KOT Programing in Kollin ZZK 4 Attorilis a moderni studioly-style deject-functional larguage concent multiple delivering a number of anomeda larguage parametrutions. Attornational larguage parametrutions. The language is fully Juax compliant and allows for mixed projects that preserve existing parts written in Juan, and continue with the development of a modern, object-functional way with minimum of balaterplate coll calculation in thropology is a scientific decipitine dealing with the divergence of the work - examples from anthropology is a scientific decipitine dealing with the divergence of the work - examples from anthropology as a scientific decipitine dealing with the divergence of the work - examples from anthropology as a scientific decipitine dealing with the divergence of the work - examples from anthropology as a scientific decipitine dealing with the divergence of the work - diver	learn the foundatio	ns of enterprise engineering, being a discipline for conceptual modelling of enterprises and institutes and their processes. The DEMO r	method and the BP	MN notation
Notifies an modern, statically-styled object-functional language that spells the statising parts written in Juos, and continue with the development of a nodern, object-functional way with minimum of bolier/stational way with a statical provide static methy minimum of bolier/stational way with a statical provides in the statical stati		will be taught. The course is designed with the respect to continuation in software implementations.		
The language is kully laws compilant and allows to mixed projects hat preserve existing parts written in June, and continue with milinum of balaer-place local. Last but not lease, Kullon is sublated by designing of DSL (Donain-Specific Language). BI-KSA Cultural and Social Anthropology CX 2K 2 Ck				-
with minimum of bale-place code. Last but not least, Kettin's suitable for designing of DSLs (Donans-Specific Languages). BH-KSA Cultural and Social Anthropology ZK 2 The one-semater course aints to acquire students with the bales of social and runnary intropological research from our "exote" etitures (topics: kinship, religion, social ecitation, clipication, clip				
Bi-KSA Cultural and Social Anthropology ZK 2 The one-senses cores aims to acquint students with the basics of social exclusion, migration, globalization, material culture, language, health, history, death, etc) will be atom provide cultures (topics: kinster, migration, globalization, material culture, language, health, history, death, etc) will be atom provide cultures (topics: kinster, migration, globalization, material culture, language, health, history, death, etc) will be atom provide cultures (topics: kinster, migration, globalization, material culture), language, health, history, death, etc) Z/K 7 The course is target in Casch. Students understand the theorefical foundation of algebra and mathematical principles of maar models of systems and use systems of linear organizations. They can apply these mathematical principles to solving proteines in 2D or 3D analytic globanes; They are able to paction, with images, kides, 3D graphics and animal of proteines of all Graphics Applications on Z, ZK 4 BI-MGA Multimedia and Graphics Applications to zD/2D bitmap and vector graphics. During the course, current tos for working with images, kides, 3D graphics and animal or processing. They understand the principle of operation and use of graphics processing carts. They gain a number of pacetoxing asset missing, retracting processing. They understand the multimedia transmission and representation systems, including real-time multimedia processing. They understand the principle of operation and use of graphics processing. They understand the principle of operation and use of graphics processing. They understand the principle of operation and use of graphics processing. They understand the principle of operatin anal use of the mathematis and principle of the Roster	The language is fu			ctional way
The one-senseter ourse aims to acquinit students with the basics of scolal and cultural intropology as scientific discipline dealing with the diversity of the world - examples from anthropological research from our "exotic" cultures (topics kindline, religion, scientific discipline dealing, material culture, language, health, history, deal, etc, will be shown. The course is presented in Carch. Bi-LIN Linger Algebra Z,ZK 7 The course is buggin in Casch. Bi-LIN Non-The course is presented in Carch. Science of the course	51.140.4			
anthropological research from our "exotic" cutures (topics: kinnih, religion, social exclusion, migration, gobalization, material cuture, language, health, history, death, etc) will be show. The course is presented in Czech. Z,ZK 7 The course is presented in Czech. Z,ZK 7 7 The course is presented in Czech. Z,ZK 7 BI-MEK Mathematical principles to solving problems in 20 or 30 analytic genome?). They understand the error-detecting and error-correcting codes. BI-MEK Mathematical principles to solving problems in 20 or 30 analytic genome?). They understand the error-detecting and error-correcting codes. BI-MEK Mathematical principles to solving problems in 20 or 30 analytic genome?). They understand the error-detecting with Images, videos. 30 graphics and animation will be introduced. Students learn anumber of practical solving being and ecorrecting rate images, reloacing problem, or creating 30 models. BI-MEK Fundamentals of Microeconomics Z,ZK 4 BI-MIK Fundamentals of Microeconomics Z,ZK 4 Microit technologies Microit techno				
Bit-Lin Linear Algebra Z,ZK 7 The course is presented in Caech. Z,ZK 7 The course is study in Caech. Students understand the theoretical foundation of algebra and mathematical principles of learner operating operating with markers and linear spaces. They are able to perform marks operations and obve systems of linear equations. They can apply these mathematical principles to solving problems in 2D or 3D analytic geometry. They understand the error-detecting and error-correcting codes. Bit-MEK Macroeconomic Context of Domestic and World Economy Z,ZK 4 Bit-MIGA Multimedia and Graphics Applications. During the course, current tools for vorling with markes, wideos, 3D graphics and animation will be irroduced. Students learn several basic techniques of creation and editing content in computer graphics, introduction to graphic formats, and compression of the principle of operation and use of graphics processing cards. They gain a number of practical sills, such as vectorizing raster image, retoucking photos, or creating 3D models. If and compression and use of graphics and photosins for the principle of the student on graphic formats, and compression and use of graphics processing cards. They gain a number of practical sills, such as vectorizing raster marker, networks concepts like protocols and technologies with a first course is presented in Caech. Z/ZK 4 Bit-MIK Fundamentials of Microeconomics Z/ZK 3 Bit-MIK Fundamentials of Microeconomics Z/ZK 3				•
BI-LIN Linear Algebra Z,ZK T The oruns is tay in the table interfactor of algebra and table spaces. They are below particines and solve systems of linear requiptions. They can apply these mathematical principles to solving roblems in 2D or 3D analytic geometry. They understand the error-detecting and error-ornecting codes. Image: Comparison of the com			n, nistory, death, e	.c) will be
The course is taught in Czech. Students understand the theoretical foundation of algebra and mathematical principles of linear models of systems around us, where the dependencies among components methy know the basics methods for operating with matices and linear agease. They are able to perform matrix operations and solve systems of linear equations. They can apply these mathematical principles to solving problems in 20 or 30 analytic geometry. They understand the error-detecting and error-correcting codes. BI-MEK Macroeconomic Context of Domestic and World Economy Z,ZK 4 5 Students get acquisited with multimedia tachnologies and applications of 2020 bit maps and vector graphics. During the course, current tools for working with images, videos, 30 argehics and animation will be introduced. Students learn several basic techniques of creation and editing cortexing. They understand the principle of operation and use of graphics processing cads. They gain a number of practical skills, such as vectorizing raster images, retouching photos, or creating 30 models. I be MIK Fundamentals of Microeconomics Z, ZK 4 3 The source is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753). BI-MIT Microeconomics Z, ZK 4 3 The nam motivation of the source So	BI-LIN		7 7K	7
among components are only linear. They know the basic methods for operating with matrices and linear spaces. They are able to perform matrix operations and solve systems of linear equations. They can apply these mathematical principles to solving problems in 20 or 30 analytic geometry. They understand the enro-detecting and enro-operating codes. BI-MEK Macroeconomic Context of Domestic and World Economy Z,ZK 4 BI-MGA Multimedia and Graphics Applications (Z,ZK 5 Students get acquinited with multimedia technologies and applications for 20:30 bitmsp and vector graphics. During the course, current tools for working with images, videos, 30 exploits and animation will be introduced. Students learn several basic technologies and applications and editing content in computer graphics, or central 30 smodels. BI-MIK Figure 10 and the subject learned in the program informatics (B1601 / 4753). BI-MIK Figure 10 and the subject stands in the introduced of the Roukers, there is an English variant in the program informatics (B1601 / 4753). BI-MIK Figure 10 and the subject stands in the introduced So specing system and some network Mikrokit technologies which are computer networks concepts like protocols and horb administrate and practically deply them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network law relative strains in the introduced on the metallic optical or wireless links and horb administrate and practically deply them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the C31 model. BI-MUD Multimedia team project KZ 4 The course is flocased on methods for interfacing operinperand devices. BI-MMP21 Multimedia team project CAC. BI-MMP21 Multimedia team project KZ 5 The organ is flocased on thethologies of the data-link, networks and transport layer data-d				
equations. They can apply these mathematical principles to solving problems in 20 or 3D analytic geometry. They undestand the error-detecting and error-correcting codes. BI-MEK Macroeconomic Context of Domestic and World Economy Z,ZK 4 BI-MGA Multimedia and Graphics Applications Z,ZK 5 Students get acquisited with multimedia technologies and paylications on 20:3D times and avector graphics. During the course, current tools for working with images, videos, 3D graphics and animation will be introduced. Students learn several basic techniques of oreation and editing crashitme multimedia processing. They understand the principle of operation and use or graphics processing cards. They gain a number of practical skills, such as vectorizing raster images, retouching photos, or creating 3D models. BI-MIK Fundamentals of Microteconomics Z,ZK 4 The nain motivation of the subject stands in the infoduction of the RouterOS operating system and some network Mikrotik technologies which are commonly used by the small and midd internet service providers (SPs). The suddents learn how to use and create the architectures of the network solutions which are based on the metallic, optical or writeless links and technologies of the data-link, network and transport layer of the OSI model. BI-MID KZ 4 BI-MID Mathematical or interfacting or peripheral devices Z,ZK 5 The main motivation of the subject stands in the infoduction of the RouterOS operating system and some network Subicatis technologies which are commonly u				
This course is presented in Czech. This course is presented in Czech. BI-MGA Multimedia and Graphics Applications Z,ZK 5 Students get acquained with multimedia technologies and applications for 2D/3D bitmap and vector graphics. During the course, current tools for working with images, videos, 30 5 graphics and animation will be introduced. Students learn several basic technologies of the course, current tools for working with images, videos, 30 6 BI-MIX Fundamentals of Microeconomics Z,ZK 4 BI-MIT Mikrotiki technologies KZ 3 The main motivation of the subject stands in the introduction of the RouterOS operating system and some network Mikrotik technologies with are based on the metallic, optical or wireless links and how to administrate and practically deptortem. XZ 4 BI-MID Mikrotiki technologies KZ 3 Bi-MLO Mathematical Logic Z,ZK 5 BI-MLO Mathematical Logic Z,ZK 5 The course is presented in Czech. KZ 4 4 BI-MIP Multimedia team project KZ 4 The course is presented in Czech. KZ 4 4 BI-MIPP21 <td></td> <td></td> <td>-</td> <td></td>			-	
BI-MGA Multimedia and Graphics Applications Z,ZK 5 Students get acquainted with multimedia technologies and applications for 20/30 bitmap and vector graphics. During the course, current tools for working with images, vides, 3D graphics and antimation will be introduced. Students learn several basic techniques of creation and editing concessing. They understand the principle of operation and use of graphics processing cards. They gian a number of practical skills, such as vector/taing raster images, retouching photos, or creating 3D models. 4 BI-MIK Fundamentals of Microeconomics Z,ZK 4 4 This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753). KZ 3 BI-MIT Mikrotik technologies KZ 3 The main motivation of the subject stands in the introduction of the Route/OS operating system and some network full rose shows which are based on the metallic, optical virules sites and to be administrate and practically deply them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of interfacial RD graphic previous full works and transport lay of the data-line, howerk and transport lay of the OSI model. BI-MIP Multimedia team project KZ 4 The course is presented in Czech. KZ 4 BI-MIP Multimedia team project KZ 4 <td>BI-MEK</td> <td></td> <td>Z,ZK</td> <td>4</td>	BI-MEK		Z,ZK	4
Students get acquainted with multimedia technologies and applications for 20/3D bitmap and vector graphics. Drug the course, current tools for working with images, videos, 3D graphics and animation will be introduced. Students learn several basic techniques of creation and editing content in computer graphics. Introduction to graphic formats, and compression technologies. They learn to use multimedia processing. They understand the principle of operation and use of graphics processing cards. They gain a number of practical skills, such as vectorizing raster images, retouching photos, or creating 3D models. BI-MIK Fundamentals of Microeconomics Z,ZK 4 The nain motivation of the subject stands in the introduction of the Route/OS operating system and some network Mikrotik technologies which are commonly used by the small and middle internet service providers (ISPs). The students learn how to use and create the architectures of the networks shouldons which are based on the metallic, optical or witeless links and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the SI model. Z,ZK 5 BI-MMP Multimedia team project KZ 4 The course is focused on methods for infrafocing peripheral devices is presented in Czech. S 5 BI-MMP Multimedia team project Z,ZK 5 The course is locused on methods for infrafocing peripheral devices is focused on techniques based on Universal serial base	51.140.4			
graphics and animation will be introduced. Students learn several basic techniques of creation and editing content in computer graphics, Introduction to graphic formats, and compression of graphics processing cards. They gain a number of practical skills, such as vectorizing raster images, relouching photos, or creating 30 models. BI-MIK Fundamentals of Microeconomics Z.ZK 4 BI-MIK Fundamentals of Microeconomics KZ 3 BI-MIT Mikrotik technologies KZ 3 The subject stands in the introduction of the Route-OS operating system and some network Mikrotik technologies which are commonly used by the small and midel interest expression structures of the network solutions which are based on the metallic, optical or wineless links and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. BI-MID Mathematical Logic Z,ZK 5 The course is focused on methods for interfacing of peripheral devices. Interfacing of real pripheral devices is focused on techniques based on Universal serial bus (USB). The course is locused on methods for interfacing of peripheral devices. Interfacing of real pripheral devices. Z,ZK 5 The course is focused on methods for interfacing of peripheral devices. Interfacing of real pripheral devices. Z,ZK 5 BI-MVT21 Modern Visualization Technologies and he	-		1 '	
ischnologies. They learn to use multimedia transmission and representation systems, including real-time multimedia processing. They understand the principle of operation and use of graphics processing cards. They gain a number of practical skills, such as vectorizing raster images, retouching photos, or creating 3D models. BI-MIK Fundamentals of Microeconomics Z,ZK 4 This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753). KZ 3 The main motivation of the subject stands in the introduction of the RouterOS operating system and some network Mikrolik technologies which are based on the metallic, optical or wireless links and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the CSI model. KZ 4 BI-MLO Mathematical Logic Z,ZK 5 BI-MMP Multimedia team project KZ 4 The course is focused on methods for interfacing peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices is lunght in Czech. Z,ZK 5 BI-MMP21 Mathematical Logic Z,ZK 5 The course is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices. Interfacing peripheral devicices is focused on techniques based on Univers				
of graphics processing cards. They gain a number of practical skills, such as vectorizing raster images, retouching photos, or creating 3D models. BI-MIK Fundamentals of Microeconomics Z,ZK 4 This course is presented in Czech. However, there is an English variant in the program informatics (B1601 / 4753). KZ 3 BI-MIT Mikrotik technologies KZ 3 The main motivation of the subject stands in the introduction of the Router-OS operating system and some network Mikrotik technologies which are commonly used by the small and middle internet service providers (ISPs). The students learn how to use and create the architectures of the network solutions which are based on the metallic, optical or wireless links and two to administrate and practically delpy them. The successful completion of this subject requires the previous how/edge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. Z,ZK 5 BI-MLO Mathematical Logic Z,ZK 5 BI-MMP Multimedia team project KZ 4 The course is presented in Czech. El-MPP.21 Methods of interfacing of prepheral devices. Interfacing of and peripheral devices. Interfacing peripheral devices. Z,ZK 5 The course is focused on methods for interfacing of peripheral devices. Interfacing peripheral devices. Z,ZK 5 The course is focused on engling and their applications			-	
BI-MIK Fundamentals of Microeconomics Z,ZK 4 This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753). XZ,ZK 4 BI-MIT Mikrotik technologies KZ 3 The main motivation of the subject stands in the introduction of the RouterOS operating system and some network Solutions which are based on the metallic, optical or wireless links and due to administrate and practically deploy them. The successful completion of this subject requires the provious knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. BI-MLO Mathematical Logic Z,ZK 5 BI-MMP Multimedia team project KZ 4 The course is focused on methods for interfacing of peripheral devices. Interfacing peripheral devices KZ 5 The course is obcused on methods for interfacing of peripheral devices. Iduents gain experience with implementation of relevant parts of USB devices. Linux and Windows drivers, simple application devices periners with method so interfacing of peripheral devices. Iduents gain experience with implementation of relevant parts of USB devices. Linux and Windows drivers, simple application devices and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their application devices were and their principles. Inamel sis to USB devices, Linux and Windows drivers, simple appli				
BI-MIT KZ 3 BI-MIT Mikrotik technologies KZ 3 The main motivation of the subject stands in the introduction of the RouterCS operating system and some network Mikrotik technologies which are commonly used by the small and middle internet service providers (ISPs). The students learn how to use and create the architectures of the network solutions which are based on the metallic, optical or wireless links and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. Z,ZK 5 BI-MLO Mathematical Logic Z,ZK 5 The course is presented in Czech. KZ 4 5 BI-MMP Multimedia team project KZ 4 This course is focused on methods for interfacing of peripheral devices. Interfacing of real peripheral devices. Z,ZK 5 BI-MVT.21 Methods of interfacing of real peripheral devices. Z,ZK 5 BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The course is to give an overiew of modern visualization technologies and their principles, namely technologies realized to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their application in practice. Se				4
The main motivation of the subject stands in the introduction of the RouterOS operating system and some network Mikrotik technologies which are commonly used by the small and middle internet service providers (ISPs). The students learn how to use and create the architectures of the network solutions which are based on the metallic, optical or wireless links and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. BI-MLO Mathematical Logic Z,ZK 5 The ocurse seminary is taught in Czech. Motion of the subject stands of prevident and practically deploy them. The successite is presented in Czech. Sinter Carch Z,ZK 5 The ocurse is focused on methods for interfacing of peripheral devices. Interfacing of peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices is imple application development, and APIs of selected devices. Z,ZK 5 BI-MVT.21 Modern Visualization Technologies Z,ZK 5 The course is focused on methods for interfacing of methyle application development, and APIs of selected devices. Z,ZK 5 BI-MVT.21 Modern Visualization Technologies Z,ZK 5 The course is focused on the isplication in practice. Several lectures deal with the content creation for the mentioned technologies, namely tradal and procedural visualizat			_,	•
middle internet service providers (ISPs). The students learn how to use and create the architectures of the network solutions which are based on the metallic, optical or wireless links and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. BI-MLO Mathematical Logic Z,ZK 5 BI-MMP Multimedia team project KZ 4 This course is presented in Czech. Z,ZK 5 BI-MPP21 Methods of interfacing peripheral devices Z,ZK 5 The course seminary is taught in Czech. Z,ZK 5 BI-MPP21 Methods of interfacing peripheral devices is focused on techniques based on Universal serial bus (USB). The course is locused on methods for interfacing of peripheral devices. Intervand Windows drivers, simple application development, and APIs of selected devices. The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization. The honger and design patterns. Z,ZK 4 BI-OOP Object-oriented Programming Z,ZK 4 Object-oriented programming and design patterns.	BI-MIT	Mikrotik technologies	KZ	3
and how to administrate and practically deploy them. The successful completion of this subject requires the previous knowledge of elementary computer networks concepts like protocols and technologies of the data-link, network and transport layer of the OSI model. BI-MLO Mathematical Logic Z,ZK 5 BI-MMP Multimedia team project KZ 4 This course is presented in Czech. This course is presented in Czech. 5 BI-MPP.21 Methods of interfacing peripheral devices Z,ZK 5 The course is focused on methods for interfacing of peripheral devices. Interfacing of real peripheral devices is focused on techniques based on Universal serial bus (USB). The course is focused on methods for interfacing of peripheral devices. Interfacing of real peripheral devices. Z,ZK 5 BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their application, scientific data visualization, and 3D model scanning. Z,ZK 4 BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming and design patterns. Handing, refactoring and design patterns. 1 BI-OOP Introduction to Optical Networks Z,ZK 4 Object-oriented programming and design patterns. <td< td=""><td>The main motivati</td><td>on of the subject stands in the introduction of the RouterOS operating system and some network Mikrotik technologies which are cor</td><td>nmonly used by the</td><td>e small and</td></td<>	The main motivati	on of the subject stands in the introduction of the RouterOS operating system and some network Mikrotik technologies which are cor	nmonly used by the	e small and
and technologies of the data-link, network and transport layer of the OSI model. Z,ZK 5 BI-MLO Mathematical Logic The course seminary is taught in Czech. Z,ZK 5 BI-MMP Multimedia team project This course is presented in Czech. KZ 4 BI-MPP.21 Methods of interfacing peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. 5 BI-MVT.21 Modern Visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. Z,ZK 4 Object-Oriented Programming has been used in the tast 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, retro handing, refactoring and design on patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks for optical network infrastructures, on possible problems with deployment of optical network	middle internet sei	rvice providers (ISPs). The students learn how to use and create the architectures of the network solutions which are based on the m	etallic, optical or w	ireless links
BI-MLO Mathematical Logic The course seminary is taught in Czech. Z,ZK 5 BI-MMP Multimedia team project This course is presented in Czech. KZ 4 BI-MPP.21 Methods of interfacing peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices. Interfacing of real peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. Z,ZK 5 BI-MVT.21 Modern Visualisation Technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely tractal and procedural visualization, scientific data visualization, and 3D model scanning. Z,ZK 4 Object-Oriented Programming Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design, The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks for oprac	and how to adminis		etworks concepts li	ke protocols
BI-MMP Multimedia team project KZ 4 This course is presented in Czech. BI-MPP.21 Methods of interfacing peripheral devices Z,ZK 5 The course is focused on methods for interfacing of peripheral devices, interfacing of real peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. 5 BI-MVT.21 Modern Visualization technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization is practice. Several lectures deal with the content creation for the mentioned technologies, namely tractal and procedural visualization, and 3D model scanning. 5 BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design patterns. Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment for other parameters. Z,ZK 4 Students get basic overvi				
BI-MMP Multimedia team project This course is presented in Czech. KZ 4 BI-MPP.21 Methods of interfacing peripheral devices Z,ZK 5 The course is focused on methods for interfacing of peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. Z,ZK 5 BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality. visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. Z,ZK 4 BI-OOP Object-Oriented Programming Object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Interret and in network infrastructu	BI-MLO	5	Z,ZK	5
BI-MPP.21 Methods of interfacing peripheral devices Z,ZK 5 The course is focused on methods for interfacing of peripheral devices. Interfacing of real peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. Z,ZK 5 BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies, namely tractal and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate togethere by message pasaring. In this course we look at some of the main principles of object-oriented programming and design patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical entework technology and on their solutions. The co	BI-MMP		K7	4
The course is focused on methods for interfacing of peripheral devices. Interfacing of real peripheral devices is focused on techniques based on Universal serial bus (USB). The course includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. BI-MVT.21 Modern Visualization Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. Z,ZK 4 BI-OOP Object-Oriented Programming Z,ZK 4 Course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment, and socurse will ack to perise proview of passive components (optical fibres, multiplexors, dispersion, compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium resear	Britini			-
Includes both PC side and peripheral devices side. Labs are practically oriented. Students gain experience with implementation of relevant parts of USB devices, Linux and Windows drivers, simple application development, and APIs of selected devices. BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. Z,ZK 4 BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multipl	BI-MPP.21	Methods of interfacing peripheral devices	Z,ZK	5
drivers, simple application development, and APIs of selected devices. BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new a	The course is focu	sed on methods for interfacing of peripheral devices. Interfacing of real peripheral devices is focused on techniques based on Universa	al serial bus (USB).	The course
BI-MVT.21 Modern Visualisation Technologies Z,ZK 5 The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECO co OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on me	includes both PC		B devices, Linux ar	d Windows
The goal of the course is to give an overview of modern visualization technologies and their principles, namely technologies related to virtual and augmented reality, visualization on high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design patterns. Z,ZK 4 BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY				
high resolution displays (e.g., SAGE and video mapping) and their applications in practice. Several lectures deal with the content creation for the mentioned technologies, namely fractal and procedural visualization, scientific data visualization, and 3D model scanning. BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 </td <td></td> <td></td> <td></td> <td></td>				
BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. Z,ZK 5 BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They unders	-			
BI-OOP Object-Oriented Programming Z,ZK 4 Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. Z,ZK 5 BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems o	nigh resolution disp		ed technologies, ha	mery fractar
Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of objects that collaborate together by message passing. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the			774	4
course we look at some of the main principles of object-oriented programming and design. The emphasis is on practical techniques for software development including testing, error handing, refactoring and design patterns. BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the				
banding, refactoring and design patterns. BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. Z,ZK 5 BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the				-
BI-OPT Introduction to Optical Networks Z,ZK 4 Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. Description Z,ZK 5 BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the			······································	
Students get basic overview of optical networking technology with the emphasis on practical utilization in Internet and in network infrastructures, on possible problems with deployment of optical network technology and on their solutions. The course will include the history of optical communications, an overview of passive components (optical fibres, multiplexors, dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the	BI-OPT		Z.ZK	4
dispersion compensators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission systems). The course will also cover the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the			1 '	
the most up-to-date topics presented at premium research conferences, such as ECOC or OFC. Attention will also be paid to new applications, such as the accurate time on Internet, ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the	-			
ultrastable frequency transfer, or sensor networks. The labs will focus on real work with optical components and on measurement of their parameters. Students will solve real tasks from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the	dispersion comper	sators, and others), and an overview of active components (optical switches and amplifiers, high-speed coherent transmission system	ms). The course wi	ll also cover
from practice. BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the				
BI-OSY Operating Systems Z,ZK 5 Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the	ultrastable freque		Students will solve	real tasks
Students understand the classical theory of operating systems (OS) in addition to the knowledge gained in the module "Programming in Shell 1". They get a solid knowledge of OS kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the			7 71/	-
kernels, processes and threads implementations. They understand the problems of race conditions, thread scheduling, resource allocation and deadlocks, the techniques of the			1 '	
			-	-
			-	

BI-PA1	Programming and Algorithmics 1	Z,ZK	6
-	ability to formulate algorithms for solving basic problems and write them in the C language. They understand data types (simple, structure of algorithms for solving basic problems and write them in the C language. They understand data types (simple, structure of algorithms for solving basic problems and write them in the C language.		-
statements, functi	ions, concept of recursion. They learn to analyse simple cases of algorithm complexity. They know fundamental algorithms for searchi with linked lists.	ng, sorting, and ma	anipulating
BI-PA2	Programming and Algorithmics 2	Z,ZK	7
	le instruments of object-oriented programming and are able to use them for specifying and implementing abstract data types (stack, q		array, set,
table). They can im	plement linked structures. They learn these skills using the programming language C++. Although this is not a module of programming ir with all C++ features needed to achieve the main objective (operator overloading, templates).	1 C++, students are	e introduced
BI-PAI	Law and Informatics	ZK	3
	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).	7 71/	
BI-PGA	Programming of graphic applications This course is presented in Czech only.	Z,ZK	5
BI-PGR.1	Computer graphics programming	Z,ZK	5
	to program a simple interactive 3D graphical application like a computer game or scientific visualisation, to design the scene, add textu		
	ike wall surface, wood, sky), and set up the lighting. At the same time, they understand the fundamental principles and terms used in a geometric transformations, or lighting model. They gain knowledge allowing orientation in computer graphics, and representing solid func		
	. for GPU programming and animations. They get used to techniques utilised in geometric modelling, modelling of curves and surface:		
BI-PHP.1	Programing in PHP	KZ	4
The course is ta	aught in Czech Main goal of the course is an introduction to PHP - language and technology. Students will learn also best practices a	and will use tool th	at eases
development in	PHP. The course is recommended for students of BIE-WSI-WI.2015 branch of study and do not have required knowledge to register f	or BIE-TWA.1. The	y should
	register for this course in their 3rd semester of study.		
BI-PJP	Programming Languages and Compilers	Z,ZK	5
	asic methods of implementation of common high-level programming languages. They get experience with the design and implementati amming language: data types, subroutines, and data abstractions. Students are able to formally specify a translation of a text that has		
	pompiler based on such a specification. The notion of compiler in this context is not limited to compilers of programming languages, but		•
	for parsing and processing text in a language defined by a LL(1) grammar.		
BI-PJS.1	JavaScript Programming	KZ	4
Main goal of the	course is an introduction to Javascript programming. Students will learn also best practices and will use tool that eases development	in Javascript. The	course is
	students of BIE-WSI-WI.2015 branch of study and do not have required knowledge to register for BIE-TWA.1. They should register for th of study.	is course in their 4	th semester
BI-PJV	Programming in Java	Z,ZK	4
	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BI-PKM	Introduction to mathematics This course is presented in Czech.	Z	4
BI-PMA	Programming in Mathematica	Z,ZK	4
Students will be wo	orking with modern technical and scientific software. Students will learn how to use different programming styles (functional programm	ing, rule-based pr	ogramming,
	etc.), how to create dynamic interactive applications and visualisations, data processing and presentations.		
BI-PNO	Practical Digital Design verview of the contemporary digital design flow and learn practical skills to use synchronous design techniques. They understand the	KZ	5
-	ion technologies FPGA and ASIC. Students demonstrate practical use of the design techniques in the module project sing modern, in		
	tools.	, ,	5
BI-PPA	Programming Paradigms	Z,ZK	5
	s with basic paradigms of high-level programming languages, including their basic execution models, benefits, and limitations of partic		
	digm and its basic principles are explained in details. Logic programming is introduced as another way of declarative programming. The		
on lambda calcult	is and on Lisp (Racket) and Prolog programming languages. Moreover, usage of these principles is demonstrated on modern mainstr such as C++ and Java.	am programming	languages
BI-PRP	Law and business	Z,ZK	4
	This course is presented in Czech.	_,	
BI-PRR	Project management This course is presented in Czech.	KZ	4
BI-PS1	Programming in Shell 1		5
		K / 1	
		KZ (file systems, proc	
	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the shell, the shell	(file systems, proc	esses and
	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems	(file systems, proc basic commands, a	esses and
threads, access rig BI-PS2	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems of the shell, the shell, the system of the shell, the system of the shell, the system of the shell, the system of the shell system of the shell system of the shell system of the shell system of the system of the shell system of the shell system of the system of the shell system of the system of	(file systems, proc pasic commands, a Z,ZK	esses and and filters to 4
threads, access rig BI-PS2	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems of the shell, the shell, the systems of the	(file systems, proc pasic commands, a Z,ZK	esses and and filters to 4
threads, access rig BI-PS2 Students gain a g	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming.	(file systems, proc pasic commands, a Z,ZK on, they gain a dec	esses and and filters to 4 eper insight
threads, access rig BI-PS2 Students gain a g BI-PSI	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In additive into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK	esses and and filters to 4 eper insight 5
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming.	(file systems, proc basic commands, a Z,ZK on, they gain a dee Z,ZK cs are primarily foc	esses and and filters to 4 eper insight 5 used on the
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In additive into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic	(file systems, proc basic commands, a Z,ZK on, they gain a dee Z,ZK cs are primarily foc	esses and and filters to 4 eper insight 5 used on the
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In additionation into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students with the state of the security and network administration.	(file systems, proc basic commands, a Z,ZK on, they gain a dee Z,ZK cs are primarily foc	esses and and filters to 4 eper insight 5 used on the
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa 2nd to 4th layer BI-PST The students will le	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students were application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK es are primarily foc vill be able to write Z,ZK s. They will be able	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa 2nd to 4th layer BI-PST The students will le basic models of ra	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students were application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable indom variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction is probabilistic problems in informatics and computer science. Using the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction in the statistical induction is information and computer science. Using the statistical induction in the statistical induction is information and computer science.	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK es are primarily foc vill be able to write Z,ZK s. They will be able on they will be able	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply to perform
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa 2nd to 4th layer BI-PST The students will le basic models of ra	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students were application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable indom variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction nown distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the statistical induction nown distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the statistical induction nown distributional parameters from random sample characteristics.	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK es are primarily foc vill be able to write Z,ZK s. They will be able on they will be able	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply to perform
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa 2nd to 4th layer BI-PST The students will le basic models of ra estimations of unk	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students v network application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable indom variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction nown distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the st more random variables.	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK es are primarily foc vill be able to write Z,ZK s. They will be able on they will be able atistical dependen	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply to perform ce of two or
threads, access rig BI-PS2 Students gain a g BI-PSI Students understa 2nd to 4th layer BI-PST The students will le basic models of ra	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students were application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable indom variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction nown distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the statistical induction nown distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the statistical induction nown distributional parameters from random sample characteristics.	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK es are primarily foc vill be able to write Z,ZK s. They will be able on they will be able	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply to perform
threads, access rig BI-PS2 Students gain a g BI-PS1 Students understa 2nd to 4th layer BI-PST The students will le basic models of ra estimations of unk BI-PYT BI-QAP	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In additionate the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students were application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable indom variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction own distributional parameters from random sample characteristics. They will also be introduced to the methods of determining the st more random variables. Python Programming The course is taught in Czech. Quantum algorithms and programming	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK as are primarily foc vill be able to write Z,ZK s. They will be able on they will be able atistical dependen Z,ZK KZ	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply e to perform ce of two or 4 5
threads, access rig BI-PS2 Students gain a g BI-PS1 Students understa 2nd to 4th layer BI-PST The students will le basic models of ra estimations of unk BI-PYT BI-QAP Course aims at giv	knowledgeable users of common Unix-like operating systems. They understand the fundamental principles of the operating systems ghts, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience of the shell, the process various text data. Programming in shell 2 eneral overview of available scripting languages, their syntax, semantics, programming style, data structures, pros and cons. In addition into shell and some other particular scripting languages and will get practical experience with shell script programming. Computer Networks Ind the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students we network application and configure a simple network. Probability and Statistics earn the basics of probabilistic thinking, the ability to synthesize prior and posterior information and learn to work with random variable indom variable distributions and solve applied probabilistic problems in informatics and computer science. Using the statistical induction nor random variables. Python Programming The course is taught in Czech.	(file systems, proc pasic commands, a Z,ZK on, they gain a dee Z,ZK as are primarily foc vill be able to write Z,ZK s. They will be able atistical dependen Z,ZK KZ n which quantum to	esses and and filters to 4 eper insight 5 used on the a simple 5 e to to apply e to perform ce of two or 4 5 echnologies

on Python language. Knowledge of linear algebra at the level of BI-LA1 and BI-LA2 (or BI-LIN) is necessary. Previous completion of BI-MA2 or BI-VMM and experience with Python might be an advantage. No previous knowledge of physics is assumed.

, ,	might be an advantage. No previous knowledge of physics is assumed.		
BI-SAP	Computer Structure and Architecture	Z,ZK	6
	and basic digital computer units and their structures, functions, and hardware implementation: ALU, control unit, memory system, inpuss, students gain practical experience with the design and implementation of the logic of a simple processor using modern digital desi		-
	e of digital computer construction principles, how a computer performs its operations, what is machine code, and what are its connect languages.	• ,	
BI-SCE1	Computer Engineering Seminar I	Z	4
	mputer Engineering is a (s)elective course for students who want to deal with deeper topics of digital design, reliability and resistance to		
	idividually within the subject. Each student or group of students solves some interesting topic with the selected supervisor. Part of the	-	
	brofessional literature and/or work in K N laboratories. The capacity of the subject is limited by the possibilities of the seminar teacher semester.		
BI-SCE2	Computer Engineering Seminar II mputer Engineering is a (s)elective course for students who want to deal with deeper topics of digital design, reliability and resistance to		4 Studente
	individually within the subject. Each students or group of students solves some interesting topic with the selected supervisor. Part of the		
	professional literature and/or work in K N laboratories. The capacity of the subject is limited by the possibilities of the seminar teacher semester.	-	
BI-SEP	World Economy and Business	Z,ZK	4
-	esented in Czech. The course introduces students of technical university to the international business. It does that predominantly by co world economy. Students get to know about different religions and cultures, necessary for doing business in diverse societies as well as		
	phomic development, which are needed for the right investment decision. Seminars help to improve on the knowledge in the form of di readings. It is advised to take bachelor level of this course BIE-SEP as a prerequisite.		
BI-SI1.2	Software Engineering I	Z,ZK	5
Students learn t	he methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get prac	tical skill thanks to	applying
-	and design of a large-scale software project that is to be developed within the concurrent BI-SP1 module. They get skill to use CASE		r modelling
	solving software-related problems. They get overview of object-oriented analysis, design, architecture, validation, verification, and tes		
BI-SI2.3	Software Engineering 2 This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).	Z,ZK	3
BI-SOJ	Machine Oriented Languages	Z,ZK	4
	urse will gain an ability to create their own programs in the assembly language of the most common PC platform focusing on optimal us		-
	ration of software with hardware. Next, there will be discussed x86 specifics of the majority of OSes from the application point of view lir	-	
	This knowledge will be used during reverse engineering, optimization, and evaluation of code security.		
BI-SP1	Team Software Project 1	KZ	4
	ands-on experience with the analysis, design, and prototyping of a large-scale software system. Theoretical support is provided by the		
-	that teaches the necessary techniques and theory. Teams consisting of 4-6 students will work on a specific project. The teacher, in the onsults with the team (at the seminars) with respect to both the formal and material aspects of the design. The resulting work will be fi		
loudol, logalarly o	in the BEI-SP2 course.		
BI-SP1.21	Team Software Project 1	KZ	5
Students gain h	ands-on experience with the analysis, design, and prototyping of a large-scale software system. Theoretical support is provided in the	BIE-SWI course t	hat runs
-	hat teaches students necessary techniques and principles. Teams consisting of 4-6 students will work on a specific project. The teach		
project leader, reg	ularly consults with the team (at the seminars) both the formal and material aspects of the software design. The resulting software art and finished in the BIE-SP2 course.	atact will be further	aevelopea
BI-SP2.1	Team Software Project 2	KZ	4
51 61 2.1	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		•
BI-SQL.1	Language SQL, advanced	KZ	4
Module is based or	h knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In pa	rticular stored proc	gram unites,
	queries, OLAP support, object-relational constructions. Part of the course is dedicated to practical database optimization from the point of	•	
	lexes, clusters, index-organized tables, and materialized views. as well as from the point of view query optimization. Execution plan an ad. Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are based on Ora	-	-
	PostgreSQL.		tially off
BI-SRC	Real-time systems	ΚZ	4
	e basic knowledge in the Real-time theory and in the design methods for RT systems including the dependability issues. Thereticla kn	owledges from lect	ures will be
experimentally ver	ified on the practical labs of the Department of Digital Design. This subject is mainly based on embedded R-T systems, therefore the as in BI-VES subject and FPGA.	used design kits ar	e the same
BI-SSB	System and Network Security	Z,ZK	5
	This course is focused on selected areas of computer networks and computer systems in terms of cyber security		
BI-ST1	Network Technology 1	Z	3
The subject is of	riented to providing the students basic information and practical skills from the area of digital and IP networks. The subject is acredited	J under the Cisco N	Netacad -
BI-ST2	CCNA1 - R&S Introduction to Networks. Network Technology 2	Z	3
DI-012	This course is presented in Czech.	2	5
BI-ST3	Network Technology 3	Z	3
	er enhance their knowledge acquired from previous BI-ST1 and BI-ST2 courses. Principles of routing and switching presented during B	I-ST1 and BI-ST2	
get further exten	ded in the course. Students will be able to start fine-tune protocols' settings to gain certain advantages like increased efficiency, predi	ctability, extension	beyond a
	simple topology, security, etc.		
BI-ST4	Network Technology 4	Z proported during E	3
	er enhance their knowledge already acquired from previous BI-ST1, BI-ST2, and BI-ST3 courses. Principles of routing and switching ot further extended in BI-ST3. Students were able to start fine-tune protocols' settings to gain certain advantages like increased effici		
-	topology, security, etc. This module teaches students to configure and fine-tune Wide Area Networks and to experience a completely		
	le Access) which radically differs from well-known Ethernet (broadcast) type of networks. Students will also manage router and switch		
recoveries, and er	nergency procedures. Also the security aspect is treated; students will learn possible intra- and inter-network attacks and the mitigation	on ways while mair	taining the
	network running.		

BI-STO	Storage and Filesystems	Z,ZK	4
The student will lea	in principles and current solutions of storage systems architecture. The module explains principles of data store, protection, and arch	iving, as so as stor	age scaling,
	load balancing and high availability.		
BI-SVZ	Machine vision and image processing	Z,ZK	5
Camera systems	are becoming a common part of life by being universally available. Related to this phenomenon is the need to process and evaluate in		The course
introduces students	s to different types of camera systems and a variety of methods for image and video processing. The course is focused on practical use	of camera system	s for solving
	problems of practice that the graduates may encounter.		
BI-TDA	Test driven architecture	KZ	4
The course is for	cused on practical examples of how to develop, test, and deploy software with tools like GitLab, Docker, Kubernetes, and more that a	e well known in the	e DevOps
world. This co	urse has a strong connection on courses like BI(E)-SI1 and BI(E)-SI2. The main goal of this course is to learn by examples that occu	r in the semester p	oroject.
BI-TEX	TeX and Typography	Z,ZK	4
This course is pres	ented in Czech. This course gives basics of programming in TeX (plain TeX, ConTeXt, LaTeX, OpTeX, LuaTeX). Te second part of the	course focuses on	typographic
	rules.		
BI-TIS	Information Systems Design	Z,ZK	5
Students know var	ious types of ISs and their practical implementation aspects and are able to match the needs of different market segments (customer	s) with application	s of existing
	technologies (databases, programming languages, GUI etc.).		
BI-TJV	Java Technology	Z,ZK	4
The subject goal is	s to introduce the programming language Java. The student gains practical experiences for smaller enterprise application programmi	ng. This subject pre	esents how
to build the three	and more layers enterprise systems. The student practically exercises all communication interfaces for each layers (JDBC, RestWet	services, JNDI et	c.). At the
	course end is student able to create three layers enterprise application.		
BI-TS1	Theoretical Seminar I	Z	4
Theoretical semina	r is intended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classic	al reading group. T	he students
are treated individu	ally and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is a	work with scientific	papers and
	other scholarly literature. The capacity is limited by the the potentials of the teachers of the seminar.		
BI-TS2	Theoretical Seminar II	Z	4
Theoretical semina	r is intended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classic	al reading group. T	he students
are treated individu	ally and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is a	work with scientific	papers and
	other scholarly literature. The capacity is limited by the the potentials of the teachers of the seminar.		
BI-TS3	Theoretical Seminar III	Z	4
Theoretical semina	r is intended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classic	al reading group. T	he students
are treated individu	ally and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is a	work with scientific	papers and
	other scholarly literature. The capacity is limited by the the potentials of the teachers of the seminar.		
BI-TS4	Theoretical Seminar IV	Z	4
Theoretical semina	r is intended for students which want to come in deeper contact with contemporary theoretical computer science. It is mostly a classic	al reading group. T	he students
are treated individu	ally and concern themselves with interesting topics from the latest research in the area. Therefore, an integral part of the course is a	work with scientific	papers and
	other scholarly literature. The capacity is limited by the the potentials of the teachers of the seminar.		
BI-TUR	User Interface Design	Z,ZK	4
	asic overview of the methods for designing and testing common user interfaces. They have experience to solve the problems where s		
not communicate w	vith the user optimally, since the needs and characteristics of users are not taken into account during product development. Students ga	ain an overview of t	he methods
	that bring users into the development process to ensure optimal communication with a user.		-
BI-TWA.1	Web Application Design	Z,ZK	5
	e of web application development. Initially, the students become familiar with HTTP and its possibilities and partly with some propertie		
	and presentation of document on the Web (CSS). These skills provide the necessary basis for the development of Web applications, acilitate the development of Web pages applications. Server side will be demonstrated on PHP technology using frameworks Symfony		
	on the client side will be demonstrated using a JavaScript language with library jQuery and possibly MV* framework Angular		velopments
BI-ULI	Introduction to Linux	Z	2
	familiar with the basics of the Linux operating system using e-learning form. They learn to work with the command line and become	1	1
	and techniques of a Unix-like system. Topics can be studied first theoretically and then practically verified in a virtual machine (te		commanus
BI-VAK.21	Selected Applications of Combinatorics	Z	3
	introduce students in an accessible form to various branches of theoretical computer science and combinatorics. In contrast to the b		1
	ions to theory. Together, we will first refresh the basic knowledge needed to design and analyze algorithms and introduce some basic		
	ticipation of students, we will focus on solving popular and easily formulated problems from various areas of (not only theoretical) info		
	ns to be solved will include, for example, graph theory, combinatorial and algorithmic game theory, approximation algorithms, optimiz		
	also try to implement solutions to the studied problems with a special focus on the effective use of existing tools.		
BI-VES	Embedded Systems	Z,ZK	5
	esign embedded systems and develop software for them. They get basic knowledge of the most common microcontrollers and embedd		1
	peripheral circuits, programming methods, and applications. They get practical skills with development kits and tools.		
BI-VHS	Virtual game worlds	ZK	4
	udents to create a complex virtual world. The course is a continuation of basic graphical courses (MGA, PGR, BLE,). This current stud	ents knowledge is	furthermore
complemented by	the theory of game design, principles of writing dialogues and characters in order to create a functional and complex virtual world. T	he course can be f	ollowed by
	the course MI-PVR with the task of converting scenes and their dynamics into a fully virtual environment suitable for VR device	ces.	
BI-VMM	Selected Mathematical Methods	Z,ZK	4
We start reviewing	geometric properties of linear spaces with inner product. Next, we introduce and analyze the discrete Fourier transform (DFT) and i	ts fast implementa	tion (FFT).
	ith differential calculus of functions involving multiple variables. We present methods for the localization of extreme values of functions		
normed linear space	es and quadratic forms. In addition, we introduce the least square method. The last part of the course is devoted to optimization and c	luality. The linear p	rogramming
	and the Simplex method is analyzed in more detail.	r	
BI-VR1	Virtual reality I	KZ	4
	ual Reality (VR), virtual reality operating system and virtual reality creation. Another objective is to meet the rules and requirements of		
The course focus	es on the ways of teaching using virtual reality technologies and interactive activities in educational virtual 3D worlds. It improves con	nputational thinking	g, empathy
	and shared social activities.		

BI-VR2		1/7	0
	Virtual reality II	KZ	3
Continuation of the	course Virtual Reality I. The new course focuses on collaborative telepresence, spatial computing and social life of avatars. The obje	ctive is to develop a	applications
	for computer science and gamification in various social metaverse and desktop engines.		
BI-VWM	Searching the Web and Multimedia Databases	Z,ZK	5
			-
-	ic overview about search techniques in the web environment that is interpreted as a very large distributed and heterogeneous storage		-
	nformation about search techniques in text and hypertext documents (the web pages themselves) and about feature extraction from		
knowledge of simila	arity search in multimedia databases (generally in collections of unstructured data). They also learn techniques for programming web se	arch engines for the	ementioned
	data types (documents).		
BI-VZD	Data Mining	Z,ZK	4
	uced to the basic methods of discovering knowledge in data. In particular, they learn the basic techniques of data preprocessing, multi	I ' I	-
			-
	es of data transformation, and fundamental principles of knowledge discovery methods. Students will be aware of the relationships betw		-
and know the fur	ndamentals of assessing model quality. Data mining software is extensively used in the module. Students will be able to apply basic d	lata mining tools to	common
	problems (classification, regression, clustering).		
BI-XML	XML Technology	Z,ZK	4
	nake and validate XML documents (XML Schema, Relax, Schematron) and learn standard methods of their processing (SAX, DOM)		be given to
	which enables addressing of parts of XML documents and its usage in different XML technologies. Students will also learn basics of X		-
		toer programming.	
	XPath programming will be based on version 2.0. Students will gain a broad overview of XML technologies.		
BI-ZDM	Elements of Discrete Mathematics	Z,ZK	5
Students get both	a mathematical sound background, but also practical calculation skills in the area of combinatorics, value estimation and formula ap	proximation, tools i	for solving
-	recurrent equations, and basics of graph theory.		-
BI-ZIVS		KZ	4
	Intelligent Embedded System Fundamentals		-
e e	ed system fundamentals course is focused on high-level technology embedded systems integrating artificial intelligence. The aim of t		
	robot control and development of applications in a graphical development environment. Lectures provide fundamentals of motion conti	-	
interfaces, robot na	avigation and development tools. In labs, students program a set of basic task by using the robot simulator and real hardware to get p	practical experience	e with these
	technologies.		
BI-ZMA	Elements of Calculus	Z.ZK	6
	knowledge and understanding of the fundamentals of classical calculus so that they are able to apply mathematical way of thinking a	I ' I	-
		-	
	chniques. They get skills to practically handle functions of one variable in solving the problems in informatics. They understand the lin		egrais and
	sums of sequences. They are able to estimate lower or upper bounds of values of real functions and to handle simple asymptotic ex		
BI-ZNF	PHP Framework Nette - basics	KZ	3
Students will gain t	he basics of PHP framework Nette. They will learn how to practically work with MVP architecture and various libraries of this Czech po	pular framework. T	he resulting
	knowledge should serve for the efficient creation of a web backend in PHP language.		
BI-ZNS	Knowledge-based Systems	Z,ZK	5
_			-
	ne familiar with the systems based on knowledge (knowledge-based systems), which are systems that usetechniques of artificial inte		
	gment, learning and reasoning from findingsand actions. The course introduces students to the philosophy and architecture of knowle		s to support
de	cision-makingand planning. The course assumes knowledge of set theory, probability theory, artificial neural networks, and evolutiona	ary algorithms.	
BI-ZPI	Process engineering	V7	
		KZ	4
Students will learn	, fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p	I I	•
	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p	rocess modelling a	nd they will
learn basics of the	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi	rocess modelling a iness processes us	ind they will ing modern
learn basics of the	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform	rocess modelling a iness processes us	ind they will ing modern
learn basics of the CASE tools. The ro	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise.	rocess modelling a iness processes us ation and business	ind they will ing modern strategy of
learn basics of the CASE tools. The ro BI-ZRS	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control	rocess modelling a iness processes us ation and business Z,ZK	and they will ing modern strategy of 4
learn basics of the CASE tools. The ro BI-ZRS The course gives	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus	rocess modelling a iness processes us ation and business Z,ZK s our attention part	ind they will ing modern strategy of 4 icularly on
learn basics of the CASE tools. The ro BI-ZRS The course gives	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control	rocess modelling a iness processes us ation and business Z,ZK s our attention part	ind they will ing modern strategy of 4 icularly on
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus	rocess modelling a iness processes us ation and business Z,ZK s our attention part n methods of system	ind they will ing modern strategy of 4 icularly on m models,
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus aring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of system ing a description of	4 icularly on m models, the system
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of syster ing a description of to sensors and ac	And they will ing modern strategy of 4 icularly on m models, the system tuators in
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of syster ing a description of to sensors and ac	And they will ing modern strategy of 4 icularly on m models, the system tuators in
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control.	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of syste ing a description of t to sensors and ac implementation of	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits	ziness modelling a iness processes us ation and business Z,ZK s our attention part n methods of system ing a description of to sensors and ac implementation of Z	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus aring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of syster ing a description of to sensors and ac implementation of Z search institution.	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of syster ing a description of to sensors and ac implementation of Z search institution. E	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus aring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of syster ing a description of to sensors and ac implementation of Z search institution. E	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of system ing a description of to sensors and ac implementation of search institution. E onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con-	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of system ing a description of to sensors and ac implementation of search institution. E onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession / courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line.	Z,ZK s our attention part n methods of system ing a description of to sensors and ac implementation of search institution. E shall content and ex respond to 4 weeks o two subjects if the	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Sefore the tent of the s of full-time e internship
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship. Auxiliary employment with a BI-ZS20	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession / courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits	Z,ZK s our attention part n methods of system ing a description of to sensors and ac implementation of search institution. E search institution. E ontext of the system z search institution. E on two subjects if the Z z	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship. Auxiliary employment with a BI-ZS20 Each student can	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession / courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re	roccess modelling a iness processes us ation and business ation and business z,ZK s our attention part n methods of syster ing a description of to sensors and ac implementation of search institution. E onal content and ex respond to 4 weeks o two subjects if the Z search institution.	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Deal	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of corese BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits cont foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits on once within his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession once within his / her bachelor's study affairs assesses the professional content. T	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of system ing a description of to sensors and ac implementation of search institution. It onal content and ex respond to 4 weeks o two subjects if the Z search institution. It onal content and ex	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ple of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professic or courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the profess	ziness modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of zearch institution. If content and ex respond to 4 weeks to two subjects if the zearch institution. If action and content and ex respond to 4 weeks onal content and ex respond to 4 weeks onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of corese BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits cont foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits on once within his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession once within his / her bachelor's study affairs assesses the professional content. T	ziness modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of zearch institution. If content and ex respond to 4 weeks to two subjects if the zearch institution. If action and content and ex respond to 4 weeks onal content and ex respond to 4 weeks onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ple of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professic or courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the profess	ziness modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of zearch institution. If content and ex respond to 4 weeks to two subjects if the zearch institution. If action and content and ex respond to 4 weeks onal content and ex respond to 4 weeks onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea internship the Dea	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ple of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession (courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits of ourses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for one int	ziness modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of zearch institution. If content and ex respond to 4 weeks to two subjects if the zearch institution. If action and content and ex respond to 4 weeks onal content and ex respond to 4 weeks onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship the Dea	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ble of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus aring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits o once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of coreign institution. The maximum number of credits a student can earn for one internship in IS KOS. Every 10 credits corr foreign institution. The maximum number of credits a student can earn for 20 credits on once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession once within his / her bachelor's study programme have a foreign internshi	z Z s our attention part methods of system implementation of z s our attention part methods of system ing a description of to sensors and ac implementation of z search institution. It search institution. It onal content and ex z issearch institution. It search institution. It o two subjects if the z issearch institution. It search institution. It o two subjects if the z issearch institution. It search institution. It issearch institution. It search institution. It <t< td=""><td>And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30</td></t<>	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship. Auxiliary employment with a BI-ZS20 Each student can internship. Auxiliary employment with a BI-ZS30 Each student can	tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ble of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus aring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of oreign institution. The maximum number of credits a student can earn for one internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits o once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession (courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of th	z Z s our attention part methods of system implementation of z s our attention part methods of system ing a description of to sensors and ac implementation of z search institution. If z	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship the Dea internship the Deal	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- le of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ering and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 0 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits o once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional con	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of z search institution. If c two subjects if the c search institution. If c start of the search institution. If c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship the Dea	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus aring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will gain the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits o once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re are of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of credits his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of credits his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of credits his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of core within his / her bachelor's study affairs assesses the professional content. The student must provide evidence of the profession of credits his / her bac	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of Z search institution. If c two subjects if the c search institution. If c start of the search institution. If c search institution. If c search institution. If c search institution. If c search institution. If c search institution. If c search institution. If c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship the Dea	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession (courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the	roccess modelling a iness processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of Z search institution. If c two subjects if the c search institution. If c start of the search institution. If c search institution. If c search institution. If c search institution. If c search institution. If c search institution. If c search institution. If c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks o two subjects if the c and content and ex respond to 4 weeks onal content and ex respond to 4 weeks	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship the Dea	tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- olle of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISC systems, description ic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits o cone within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession of core within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the profession occe within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or t	z z z z z s our attention part n methods of system ing a description of to sensors and actimplementation of z search institution. It bonal content and extrespond to 4 weeks to two subjects if the z search institution. It bonal content and extrespond to 4 weeks to two subjects if the z search institution. It content and extrespond to 4 weeks to two subjects if the z search institution. It content and extrespond to 4 weeks to two subjects if the z search institution. It consult content and extrespond to 4 weeks to two subjects if the consult content and extrespond to 4 weeks to two subjects if the	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship Auxiliary employment with a	Audamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focu- ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professic or courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits or ourses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one intern	Z,ZK s our attention part n methods of systeming a description of to sensors and accomplementation of Z search institution. It content and expression of the sensors and accomplementation of Z search institution. It content and expression of the sensors and accomplementation of Z search institution. It content and expression to 4 weeks to two subjects if the Z search institution. It content and expression to 4 weeks to two subjects if the Z search institution. It content and expression to 4 weeks to two subjects if the Z search institution. It Content and expression to 4 weeks to two subjects if the Z search institution. It Content and expression to 4 weeks to two subjects if the Z search institution. It Content and expression to 4 weeks to two subjects if the Z Search institution. It	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 30
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship are introd	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ble of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professio c courses BI-ZS10, BI-ZS20 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits once within his / her bachelor's study programme have a foreign internship is 13 or credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 30 credits once within his / her bachelor's study programme have a foreign internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student	zincess modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of Z search institution. If content and ex respond to 4 weeks o two subjects if the zearch institution. If search institution. If content and ex respond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the z,ZK al tasks from the ar	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 4 eas of state
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship are introd	Audamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi- ole of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focu- ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professic or courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits or ourses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one intern	zincess modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of Z search institution. If content and ex respond to 4 weeks o two subjects if the zearch institution. If search institution. If content and ex respond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the z,ZK al tasks from the ar	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 4 eas of state
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship are introd	Tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busi ble of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professio c courses BI-ZS10, BI-ZS20 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits once within his / her bachelor's study programme have a foreign internship is 13 or credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 30 credits once within his / her bachelor's study programme have a foreign internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student	zincess modelling a ainess processes us ation and business Z,ZK s our attention part n methods of systeming a description of to sensors and ac implementation of Z search institution. If content and ex respond to 4 weeks o two subjects if the zearch institution. If search institution. If content and ex respond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the zespond to 4 weeks o two subjects if the z,ZK al tasks from the ar	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 4 eas of state
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship. Auxiliary employment with a BI-ZS30 Each student can internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship. Auxiliary employment with a BI-ZUM Students are introd space search, mult	fundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busile of process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus its systems analysis and design verification, simple PID feedback, PSD, and fuzzy controllers. Students will learn the methods of creat linear dynamic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits ocurses BI-2510, BI-2520, BI-2530 are used used for the evidence and evaluation of the internship in 18 KOS. Every 10 credits cor foreign institution. The maximum number of credits a student can earn for one internship is in SKOS. Every 10 credits cor foreign institution. The maximum number of credits a student can earn for one internship in SKOS. Every 10 credits cor foreign institution. The maximum number of credits a student can earn for one internship in SKOS. Every 10 credits cor foreign institution. The maximum number of credits a student can earn for one internship in SKOS. Every 10 credits cor foreign institution. The maximum number of credits a student can earn for one internship in SKOS. Every 10 credits cor foreign institution. The maximum number of credits a student can earn for one	z Z s our attention part n methods of systeming a description of to sensors and accimplementation of z search institution. It content and expression of z search institution. It content and expression of z search institution. It content and expression to 4 weeks o two subjects if the z usearch institution. It content and expression to 4 weeks o two subjects if the z usearch institution. It content and expression to 4 weeks o two subjects if the z usearch institution. It z usearch institution. It z usearch institution. It content and expression to 4 weeks o two subjects if the z at tasks from the aris and the neural neu	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 4 eas of state
learn basics of the CASE tools. The ro BI-ZRS The course gives control of enginee basic linear dynam model, the basic control loops, issu BI-ZS10 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS20 Each student can internship the Dea internship. Auxiliary employment with a BI-ZS30 Each student can internship the Dea internship an internship the Dea internship an internship the Dea internship an internship the Dea internship an internship the Dea	tundamentals of process engineering in this subject. Students will get necessary foundations for understanding formal principles of p used notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busis are notations (UML, BPMN, BORM). The focus in this subject lies in training of practical skills of formalisation and modelling of busis are not process engineering for information systems development is discussed as well as its importance in the overall context of inform an enterprise. Basics of System Control an introduction to the field of automatic control. Students will gain knowledge in this rapidly evolving field of great future. We will focus ring and physical systems. We will provide basic information from the feedback control of linear dynamical SISO systems, description ic systems analysis and design verification and simple PID feedback, PSD, and fuzzy controllers. Attention is also given es of stability in control systems, single and continuous adjustment of the controller parameters, and certain aspects of the industrial and digital controllers and PLC control. Bachelor internship abroad for 10 credits once within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. The student must provide evidence of the professic courses BI-ZS10, BI-ZS20, BI-ZS30 are used used for the evidence and evaluation of the internship in IS KOS. Every 10 credits con foreign institution. The maximum number of credits a student can earn for one internship is 30 credits. This amount can be divided int exceeds the academic year's dead-line. Bachelor internship abroad for 20 credits ocure within his / her bachelor's study programme have a foreign internship at a foreign university or other foreign scientific and/or re an of the FIT, or the vice-dean for study affairs assesses the professional content. Th	Z,ZK s our attention part n methods of systeming a description of to sensors and accomplementation of Z search institution. If content and expression of the sensors and accomplementation of Z search institution. If Data content and expression to 4 weeks to two subjects if the C usearch institution. If Search institution. If content and expression to 4 weeks to two subjects if the content and expression to 4 weeks to two subjects if the Z usearch institution. If C content and expression to 4 weeks to two subjects if the C content and expression to 4 weeks to two subjects if the C content and expression to 4 weeks to two subjects if the C content and expression the arm content and expression the arm content and expression the arm	And they will ing modern strategy of 4 icularly on m models, the system tuators in continuous 10 Before the tent of the s of full-time e internship 20 Before the tent of the s of full-time e internship 30 Before the tent of the s of full-time e internship 4 eas of state etworks, will

BIE-EEC	English language external certificate	Z	4
The BIE-ECC cours	se can be recognized for any active semester after the submission of a certificate certificate that demonstrates their proficiency in English	sh comparable to o	r exceeding
	the B2 level of the Common European Framework of Reference for Languages.		
BIE-IMA2	Introduction to Mathematics 2	Z	2
Students refresh a	nd extend knowledge of elementary functions and their properties. Students understand basic mathematical principles and they are a	ble to apply them i	in particular
	examples.	7 71/	4
BIE-ZUM	Artificial Intelligence Fundamentals uced to the fundamental problems in the Artificial Intelligence, and the basic methods for their solving. It focuses mainly on the classica	Z,ZK	4
	i-agent systems, game theory, planning, and machine learning. Modern soft-computing methods, including the evolutionary algorithm		
opaco coaron, man	be presented as well.		
FI-FIL	Philosophy	ZK	2
	see A0B16		_
FI-GNO	Introduction to Gnoseology	ZK	2
P edm t studenty	uvádí do teorie poznání, systémovým pohledem nahlíží na pole kultury, na vztahy a rozdíly mezi p írodními a humánními obory, v do	u a um ním. Rozb	orem d jin
modernismu a myš	lenkových proud 20. století jsou ukázány prom ny paradigmat a p evrat k postmodernismu, analýzou paralelism ve v d a um ní c	dhaleny mechanis	mytvrích
	osti na teorii p írodních jazyk a sémiotiky je vedena diskuze i o kognitivních procesech, v historickém p ehledu nastín na hlediska este		
kapitolou jsou mod	ely spojitých p írodních soustav a systém, v záv ru p ednášek je pozornost v nována filozofii v dy a otázkám udržitelného rozvoje.	P edm t p ednáší	a garantuje
	Ing. Ivo Janoušek CSc.	_	
FI-HPZ	Humanities subject from a study abroad bject that has been studied abroad" is covered by the Humanities subject from a study abroad in Compulsory Humanities Module that	Z Z	3
A Humanities sub	The substitution is approved by the Vice-Dean for study affairs on behalf of the Dean at the request of the student.	is required in the o	cumculum.
FI-HTE	History of Technology and Economics	ZK	2
	ces the scientific disciplines of history and technology, economic and social history of the Czech lands and Czechoslovakia in compa		
	the European region 19 to 21 century .		
FI-KSA	Cultural and Social Anthropology	ZK	2
	course aims to acquaint students with the basics of social and cultural anthropology as a scientific discipline dealing with the diversity		
	search from our "exotic" cultures (topics: kinship, religion, social exclusion, migration, globalization, , material culture, language, health		
	shown. The course is an interesting alternative to other humanities, taught at FIT.		
FI-MPL	Managerial Psychology	ZK	2
FI-ULI	Introduction to Linguistics for Computer	ZK	2
	This course is presented in Czech.	·	
FI-VEZ	economic-managerial course from a study abroad	Z	4
A "Humanities sub	ject that has been studied abroad" is covered by the Humanities subject from a study abroad in Compulsory Humanities Module that	is required in the	curriculum.
	The substitution is approved by the Vice-Dean for study affairs on behalf of the Dean at the request of the student.		
NI-AFP	Applied Functional Programming	KZ	5
	ented in Czech. Functional programming represents one of the traditional programming paradigms. Traditional and novel functional programming paradigms.		
the rise nowadays	and the functional paradigm becomes an important construct of traditionally imperative languages (C++, C#, Java). As such, master necessary competence of a software engineer: the theory and especially the practice.	ing this paradigm t	becomes a
NI-DDM	Distributed Data Mining	KZ	4
	a state-of-the-art approaches for distributed data mining and parallelization of machine learning algorithms. Students will gain hands c		•
	amework Apache Spark and with existing distributed DM / ML algorithms. They will learn principles of their parallel implementations a		-
	approaches to parallelize other algorithms. The course is prezented in czech language.		
NI-DSP	Database Systems in Practes	Z,ZK	4
	This course is presented in Czech.		
NI-DZO	Digital Image Processing	Z,ZK	4
-	ents a comprehensive overview of modern methods for interactive editing of digital images and video. It mainly deals with practical alg		-
-	e an interesting theoretical basis. Visually attractive applications provide better understanding of basic theoretical background that is als		
	processing. This course will introduce algorithms solving the following practical applications: edge-aware editing, tone mapping, HDR	-	-
	abstraction, hybrid images, gradient domain editing, seamless image stitching and cloning, digital photo-montage, color-to-gray conv gid-as-possible image deformation, free-form image registration, texture synthesis, interactive segmentation, colorization, painting, ac		
NI-IAM	Internet and Multimedia	Z,ZK	4
	se is focused on principles and modern technologies for network transmissions of audiovisual (AV) signals. The syllabus includes acq	· .	
	signals (output), network communication protocols, device interfaces, codecs, data formats and stereoscopy. We will look at practical u	-	
audiovisual transn	nissions. Within the labs, students will practically assemble AV transmission chains using HW and SW technologies and verify the effe	ect of various comp	ponents on
the quality and late	ncy of AV transmissions. Students will learn how to build Internet infrastructure for end-to-end AV transmissions from the recording the	e scene up to the p	presentation
	for audience.		
NI-LSM	Statistical Modelling Lab	KZ	5
-	ented on a single and multi-target tracking. The student both learns the existing methods and tries to implement them. The stress is p		
available information	on and its modeling using numpy and scipy. The second half of the semester is focused on the design of methods and algorithms, and	-	properties.
	At this point, the subject is on the border of own research and may result in the topic of final work (diploma or bachelor thesi		
NI-MOP	Modern Object-Oriented Programming in Pharo	KZ	4
	ogramming is currently one of the most widespread paradigms of software creation, especially enterprise information systems, where i nplex modern applications. In this course, we build on the knowledge acquired in the course BI-OOP and aim to further deepen the skills	-	
	in modern pure object system Pharo (https://pharo.org). The course focuses on individual approach to students, their development no		
	ing object programming skills, which are generally applicable in other OO languages, students will also gain the opportunity to work c		
	rms of semestral work with the possibility of cooperation with practice and related bachelor, diploma, postgraduate our direct involver		
NI-MPL	Managerial Psychology	ZK	2
NI-MSI	Mathematical Structures in Computer Science	Z,ZK	4
Mathematical se	emantics of programming languages. Data types as continous lattices, Scott topology. Procedures as continuous mappings. The Scott	model of lambda	calculus.
	Introduction to category theory.		

NI-OLI	Linux Drivers	Z,ZK	4
The Linux operatir	g system is an important operating system for personal computer and also for embedded systems. Systems on chip and combining pc	werful processors	and FPGAs
increase the var	iability of peripheral subsystems requiring specific software drivers. This course is an advanced course in the Linux driver development	nt for master's stur	dents. The
CC	ourse provides knowledge of Linux operating system architecture, principles of development of various types drivers, including practice	al experience.	
NI-PDD	Data Preprocessing	Z,ZK	5
Students learn to p	orepare raw data for further processing and analysis. They learn what algorithms can be used to extract information from various data s	ources, such as ir	nages, texts,
time series, etc.,	and learn the skills to apply these theoretical concepts to solve specific problems in individual projects - e.g., extraction of characteris	tics from images o	or from web
	pages.		
NI-PSL	Programming in Scala	Z,ZK	4
The course introd	uces the modern programming language Scala which exploits object-functional paradigm. Scala comprises advance language feature	es - e.g.pattern ma	atching and
advance standard	library. Scala enables to use of applications functional patterns e.g. H-List, Monads, etc. Scala is used by many powerful frameworks and	l libraries e.g. Play	, Cassandra,
	Scalaz, etc.		
NI-REV	Reverse Engineering	Z,ZK	5
Students will get a	cquainted with the essentials of reverse engineering of computer software. They will learn how processes start and what happens before	ore and after the n	nain function
is called. Students	s will understand how executable files are organized and how they interact with 3rd party libraries. Another part of the course is dedica	ated to reverse en	gineering of
applications wr	tten in C++. Students will also understand principles of disassemblers and obfuscation techniques. A part of the course will also be do	edicated to debug	gers: how
debuggers and d	ebugging work and which methods can be used to detect it. One of the lectures will be dedicated to the latest trends on the computer	malware scene. T	he focus of
	the course is on the seminars, where students will solve practically oriented tasks from the real world.		
NI-SYP	Parsing and Compilers	Z,ZK	5
The module builds	upon the knowledge of fundamentals of automata theory, formal language and formal translation theories. Students gain knowledge of va	rious variants and	applications
	of LR parsing and are introduced to special applications of parsers, such as incremental and parallel parsing.		
NI-TSP	Testing and Reliability	Z,ZK	5
	knowledge about circuit testing and about methods for increasing reliability and security. They will get practical skills to be able to pre	, ,	h the help of
the intuitive path s	ensitization and to use an ATPG for automatic test generation. They will be able to design easily testable circuits and systems with bu	ilt-in-self-test equi	ipment. They
	will be able to compute, analyze, and control the reliability and availability of the designed circuits.		
NI-VCC	Virtualization and Cloud Computing	Z.ZK	5
Students will ga	in knowledge of architectures of large computer systems that are used in data centers and computer infrastructure of companies and	organizations. Th	ey will get
acquainted with v	irtualization principles, tools and technologies that serve to facilitate and automate configuration, testing and monitoring, and to efficie	ently operate and o	optimize the
performance pa	arameters of modern computer systems. Theoretically and practically, they will get acquainted with containerization as the most effecti	ve technology tod	lay for the
management of co	mplex computer systems and with specific technologies of cloud systems. Finally, they will learn the principles and gain practical skills ir	the use of moder	rn integration
	and development tools (Continuous integration and development).		
NI-VYC	Computability	Z,ZK	4
	Classical theory of recursive functions and effective computability.	,	I
TV1	Physical Education	Z	0
TV2	Physical Education	Z	0
TV2K1	Physical Education 2	Z	1
TVKLV	Physical Education Course	Z	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/FF.html</u> Generated: day 2024-05-20, time 10:31.