Study plan

Name of study plan: Bachelor branch Web and Software Engineering, spec. Software Engin., in Czech, part-time, 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 combined

Required credits: 160 Elective courses credits: 20 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 kombinované 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: BIK-PP.2015

Name of the group: Compulsory Courses of Bachelor Study Program Informatics, 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 at least 20 courses

Credits in the group: 116

přechodně jsou ve skupině vzálemně se vylučující předměty BIK-BPR a BI-BPR. Později zde 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
BIK-AG1	Algorithms and Graphs 1 Ji í Chludil	Z,ZK	6	14KP+4KC	Z	PP
BIK-AAG	Automata and Grammars Ond ej Guth	Z,ZK	6	13KP+4KC	Z	PP
BI-BAP	Bachelor Thesis Zden k Muziká Zden k Muziká (Gar.)	Z	14		L,Z	PP
BIK-BPR	Bachelor project Zden k Muziká Zden k Muziká (Gar.)	Z	2		Z,L	PP
BIK-BEZ	Security Ji í Dostál	Z,ZK	6	13KP+4KC	L	PP
BIK-CAO	Digital and Analog Circuits Martin Da hel	Z,ZK	5	13KP+4KC	Z	PP
BIK-DBS	Database Systems Michal Valenta	Z,ZK	6	13KP+8KC	L	PP
BIK-DPR	Documentation, presentation, and rhetoric Ond ej Guth, Dana Vynikarová Dana Vynikarová (Gar.)	KZ	4	5ZP	L	PP
BIK-LIN	Linear Algebra Karel Klouda Karel Klouda (Gar.)	Z,ZK	7	26KP+4KC	L	PP
BIK-MLO	Mathematical Logic Karel Klouda Karel Klouda (Gar.)	Z,ZK	5	13KP+4KC	Z	PP
BIK-OSY	Operating Systems Michal Šoch	Z,ZK	5	13KP+4KC	L	PP
BIK-PSI	Computer Networks	Z,ZK	5	13KP+4KC	L	PP
BIK-PST	Probability and Statistics Daniel Vasata	Z,ZK	5	13KP+4KC	Z	PP
BIK-PA1	Programming and Algorithmics 1 Josef Vogel	Z,ZK	6	20KP+6KC	Z	PP
BIK-PA2	Programming and Algorithmics 2	Z,ZK	7	13KP+4KC	L	PP
BIK-PS1	Programming in Shell 1 Dana ermáková	KZ	5	13KP+4KC	Z	PP

SIR-SAP Computer Structure and Architecture	DIV CIA O	Software Engineering I	7.71/		121/0.41/0	71	
SIR-CDM Elements of Discrete Mathematics ZZK 5 S09-WeC Z PP SIR-CZMA Elements of Calculus ZZK 5 S09-WeC Z PP Baracterisatics of the courses of this group of Study Plan: Code-BIK-PP.2015 Name-Compulsory Courses of Bachelor Study Prograt formatics, in Czech, Version 2015 SIR-CZMA A Quantities and Graphs 1 ZZK 6 ZVF-WeC Z PP Baracterisatics of the courses of this group of Study Plan: Code-BIK-PP.2015 Name-Compulsory Courses of Bachelor Study Prograt formatics, in Czech, Version 2015 SIR-CALC A Quantities and Graphs 1 ZZK 6 ZVF-WeC Z PP SIR-CALC A Quantities and Graphs 1 ZZK 6 ZVF-WeC Z PP SIR-CALC A Quantities and Graphs 1 ZZK 6 ZVF-WeC Z PP SIR-CALC A Quantities and Graphs 1 ZZK 6 ZVF-WeC Z PP SIR-CALC A Quantities and Graphs 1 ZZK 6 ZVF-WeC Z ZZK 6 ZVF-WeC Z ZZK 6 ZVF-WeC Z ZZK G ZVF-WeC Z ZZK G ZVF-WeC Z ZZK G ZVF-WeC Z ZZK	BIK-SI1.2	Ji í Mlejnek Ji í Mlejnek Ji í Mlejnek (Gar.)	Z,ZK	5	13KP+4KC	Z,L	PP
Six-CMA Elements of Calculus April Principal Scholary (Sac)	BIK-SAP		Z,ZK	6	13KP+4KC	L	PP
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Mortanian and Graphs	BIK-ZMA		Z,ZK	6	20KP+4KC	Z	PP
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Bit-GEPT Security Securit						Z	14
SIK-BEZ Security Mountain understand the mathematical undermentals of cryptography and have an overview of current cryptographic algorithms and applications symmetric cryptography and have in the fundamentals of eacure programming and IT security, the fundamentals of designing and using modern cryptosystems for computer systems, they are able to use proprisy and source, cryptography cryptography cryptography and source, and cryptography and source, as well are based on the cryptography and confidence on the cryptography and cryptography and cryptography and cryptography cryptography cryptography and cryptograp							
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Anagement of virtual memory, principles and architectures of disks, RAID and file systems. They are able to design and implement simple multithreaded applications. SIK-PS			-	-			-
Students gain the ability to formulate algorithms for solving basic problems and write them in the C language. They understand data types (simple, structured, pointers), expressions, statements, functions, concept of recursion. They learn to analyse simple cases of algorithm complexity. They know fundamental algorithms for searching, sorting, and manipulating with linked lists. Programming and Algorithmics 2 Richard Students Robert Pargramming and Algorithmics 2 Richard Students Robert Pargramming and Algorithmics 2 Richard Students Robert Pargramming in Shell 1 Richard Students Robert Pargramming in Glarge Software Engineering I and search of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands on allysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands on allysis and design of large software project that is to be developed within the concurrent BI-SP1 module. They get skill to use CASE tools and UML for modelling lands and design of large-scale software project that is to be developed within the concurrent BI-SP1 module. They get paralical skill thanks to applying lands 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 tools and UML for modelling lands and the concurrent BI-SP1 module. They get skill to use CASE tools and UML for modelling lands and the methods of 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 CASE tools and UML for modelling lands and the methods of 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 CASE tools and U	′ '		0,		,		
Students understand the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The lopics are primarily focused on the find to 4th layer of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students will be able to write a simple network application and configure a simple network. Probability and Statistics Z,ZK 5			igir and implomen	it diriplo irio		··	
The twork application and configure a simple network. Sik-PST	-	•	nicate in compute	r networks.	ı	· .	_
Probability and Statistics Students are introduced to elements of probability thinking, ability of the synthesis both prior and posterior information and use to work with random variables. They will be able to apply correctly basic models of the distribution of random variables and to solve applied probability problems in the area of informatics and computer science. Using statistical inference nethods, they master methods of statistical inference to estimate unknown population parameters on the basis of sample. They get acquainted with basic methods of the determination of possible statistical dependence of two or more random variables. BIK-PA1 Programming and Algorithmics 1 Z,ZK 6 Students gain the ability to formulate algorithms for solving basic problems and write them in the C language. They understand data types (simple, structured, pointers), expressions, tatements, functions, concept of recursion. They learn to analyse simple cases of algorithm complexity. They know fundamental algorithms for searching, sorting, and manipulating with linked lists. BIK-PA2 Programming and Algorithmics 2 Z,ZK 7 Students know the instruments of object-oriented programming and are able to use them for specifying and implementing abstract data types (stack, queue, enlargeable array, set, able). They can implement linked structures. They learn these skills using the programming language C++. Although this is not a module of programming in C++, students are introduced with all C++ features needed to achieve the main objective (operator overloading, templates). BIK-PS1 Programming in Shell 1 KZ 5 Students become advanced and knowledgeable users of common UNIX-like operating systems. They understand the fundamental principles of the operating systems (file systems, processes and 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. BIK-S1.2 Software Engineering Z,ZK 5 Stud	2nd to 4th layer of the ISC	OSI model. They also get a basic understanding of communication media, security, and	d network adminis	tration. Stud	dents will be	able to wri	te a simple
Students are introduced to elements of probability thinking, ability of the synthesis both prior and posterior information and use to work with random variables. They will be able to apply correctly basic models of the distribution of random variables and to solve applied probability problems in the area of informatics and computer science. Using statistical inference nethods, they master methods of statistical inference to estimate unknown population parameters on the basis of sample. They get acquainted with basic methods of the determination of possible statistical dependence of two or more random variables. BIK-PA1 Programming and Algorithmics 1 Students gain the ability to formulate algorithms for solving basic problems and write them in the C language. They understand data types (simple, structured, pointers), expressions, tatements, functions, concept of recursion. They learn to analyse simple cases of algorithm complexity. They know fundamental algorithms for searching, sorting, and manipulating with linked lists. BIK-PA2 Programming and Algorithmics 2 Z,ZK 7 Students know the instruments of object-oriented programming and are able to use them for specifying and implementing abstract data types (stack, queue, enlargeable array, set, able). They can implement linked structures. They learn these skills using the programming language C++. Although this is not a module of programming in C++, students are introduced with all C++ features needed to achieve the main objective (operator overloading, templates). BIK-PS1 Programming in Shell 1 Students become advanced and knowledgeable users of common UNIX-like operating systems. They understand the fundamental principles of the operating systems, rocesses and 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. BIK-S1.2 Software Engineering I Z,ZK 5 Students bearn the methods of analysis and design of large software systems, which ar		<u> </u>					
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nethods, they master methods of statistical inference to estimate unknown population parameters on the basis of sample. They get acquainted with basic methods of the determination of possible statistical dependence of two or more random variables. Image: Bik-PA1						-	
If possible statistical dependence of two or more random variables. IK-PA1 Programming and Algorithmics 1 Students gain the ability to formulate algorithms for solving basic problems and write them in the C language. They understand data types (simple, structured, pointers), expressions, tatements, functions, concept of recursion. They learn to analyse simple cases of algorithm complexity. They know fundamental algorithms for searching, sorting, and manipulating with linked lists. IK-PA2 Programming and Algorithmics 2 Students know the instruments of object-oriented programming and are able to use them for specifying and implementing abstract data types (stack, queue, enlargeable array, set, able). They can implement linked structures. They learn these skills using the programming language C++. Although this is not a module of programming in C++, students are introduced with all C++ features needed to achieve the main objective (operator overloading, templates). IKZ 5 Students become advanced and knowledgeable users of common UNIX-like operating systems. They understand the fundamental principles of the operating systems (file systems, processes and 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. IKZ 5 Software Engineering I Z,ZK 5 Students learn the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands-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 CASE tools and UML for modelling	-			-		-	
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tatements, functions, concept of recursion. They learn to analyse simple cases of algorithm complexity. They know fundamental algorithms for searching, sorting, and manipulating with linked lists.	BIK-PA1 F	Programming and Algorithmics 1			Z	,ZK	6
With linked lists. BIK-PA2 Programming and Algorithmics 2 Z,ZK 7 Students know the instruments of object-oriented programming and are able to use them for specifying and implementing abstract data types (stack, queue, enlargeable array, set, able). They can implement linked structures. They learn these skills using the programming language C++. Although this is not a module of programming in C++, students are introduced with all C++ features needed to achieve the main objective (operator overloading, templates). BIK-PS1 Programming in Shell 1 KZ 5 Students become advanced and knowledgeable users of common UNIX-like operating systems. They understand the fundamental principles of the operating systems (file systems, processes and 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. BIK-S11.2 Software Engineering I Z,ZK 5 Students learn the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands-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 CASE tools and UML for modelling						-	
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Students know the instruments of object-oriented programming and are able to use them for specifying and implementing abstract data types (stack, queue, enlargeable array, set, able). They can implement linked structures. They learn these skills using the programming language C++. Although this is not a module of programming in C++, students are introduced with all C++ features needed to achieve the main objective (operator overloading, templates). BIK-PS1 Programming in Shell 1 KZ 5 Students become advanced and knowledgeable users of common UNIX-like operating systems. They understand the fundamental principles of the operating systems (file systems, processes and 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. BIK-SI1.2 Software Engineering I Students learn the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands-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 CASE tools and UML for modelling		Programming and Algorithmias 2			1 7	771/	7
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processes and 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. BIK-SI1.2 Software Engineering I Z,ZK 5 Students learn the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands-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 CASE tools and UML for modelling	· ·	· ·	the fundamental i	orinciples of			
SIK-SI1.2 Software Engineering I Students learn the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands-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 CASE tools and UML for modelling			-	-	-		-
Students learn the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get practical skill thanks to applying lands-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 CASE tools and UML for modelling		Software Engineering I			Z	,ZK	5
ands-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 CASE tools and UML for modelling			nplemented in tear	ms. They ge			
and solving software-related problems. They get overview of object-oriented analysis, design, architecture, validation, verification, and testing processes.	hands-on analysis and de	sign of a large-scale software project that is to be developed within the concurrent BI-SF	21 module. They g	et skill to us	se CASE too		
	and solving software-relat	ted problems. They get overview of object-oriented analysis, design, architecture, validati	on, verification, a	nd testing p	rocesses.		

BIK-SAP Computer Structure and Architecture

Students understand basic digital computer units and their structures, functions, and hardware implementation: ALU, control unit, memory system, inputs, outputs, data storage and transfer. In the labs, students gain practical experience with the design and implementation of the logic of a simple processor using modern digital design tools. The subject teaches basic knowledge of digital computer construction principles, how a computer performs its operations, what is machine code, and what are its connections to higher programming languages.

BIK-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 approximation, tools for solving

BIK-ZMA | Elements of Calculus

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 techniques. They get skills to practically handle functions of one variable in solving the problems in informatics. They understand the links between the integrals and sums of sequences. They 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: 32

The role of the block: PZ

recurrent equations, and basics of graph theory.

Code of the group: BIK-PZ-WSI-SI.2015

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

2015

Requirement credits in the group: In this group you have to gain 32 credits

Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 32 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
BIK-KOM	Conceptual Modelling Marek Suchánek, Michal Valenta, Robert Pergl, Mohamed Bettaz Robert Pergl Robert Pergl (Gar.)	Z,ZK	5	14KP+4KC	Z	PZ
BIK-OOP	Object-Oriented Programming Filip K ikava Filip K ikava Filip K ikava (Gar.)	Z,ZK	4	14KP+4KC	Z	PZ
BIK-PAI	Law and Informatics Zden k Ku era	ZK	3	13KP	Z	PZ
BIK-PPA	Programming Paradigms	Z,ZK	5	14KP+4KC	Z	PZ
BIK-SI2.3	Software Engineering 2 Ji í Mlejnek Ji í Mlejnek (Gar.)	Z,ZK	3	14KP	Z	PZ
BIK-SP1	Team Software Project 1 Ji í Mlejnek	KZ	4	8KC	L	PZ
BIK-SP2.1	Team Software Project 2 Ji í Mlejnek Ji í Mlejnek (Gar.)	KZ	4	12KC	Z	PZ
BIK-TJV	Java Technology Ond ej Guth	Z,ZK	4	14KP+4KC	Z	PZ

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

BIK-KOM	Conceptual Modelling	Z,ZK	5
BIK-OOP	Object-Oriented Programming	Z,ZK	4
This course is presented	in Czech. Object-oriented programming has been used in the last 50 years to solve computational problems by using graphs of	of objects that coll	aborate 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 tec	chniques for softw	are development
including testing, error l	nanding, refactoring and design patterns.		
BIK-PAI	Law and Informatics	ZK	3
BIK-PPA	Programming Paradigms	Z,ZK	5
programming paradigm	asic paradigms of high-level programming languages, including their basic execution models, benefits, and limitations of par and its basic principles are explained in details. Logic programming is introduced as another way of declarative programming on Lisp (Racket) and Prolog programming languages. Moreover, usage of these principles is demonstrated on modern main	. The principles a	re demonstrated
BIK-SI2.3	Software Engineering 2	Z,ZK	3
This course is presente	d in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).		
BIK-SP1	Team Software Project 1	KZ	4
Students gain hands-or	experience with the analysis, design, and prototyping of a large-scale software system. Theoretical support is provided by the	ne BEI-SWI cours	e that runs
concurrently and that te	aches the necessary techniques and theory. Teams consisting of 4-6 students will work on a specific project. The teacher, in	the role of the tea	m and project
leader, regularly consul in the BEI-SP2 course.	ts with the team (at the seminars) with respect to both the formal and material aspects of the design. The resulting work will be	oe further develop	ed and finished
BIK-SP2.1	Team Software Project 2	KZ	4

BIK-TJV Java Technolog

7.7K

The subject goal is to introduce the programming language Java. The student gains practical experiences for smaller enterprise application programming. This subject presents how to build the three and more layers enterprise systems. The student practically exercises all communication interfaces for each layers (JDBC, RestWeb services, JNDI etc.). At the course end is student able to create three layers enterprise application.

Name of the block: Povinné ekonomické Minimal number of credits of the block: 4

The role of the block: PE

Code of the group: BIK-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:

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
BIK-EMP	Economic and management principles David Buchtela	KZ	4	14KP+4KC	L	PE

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

BIK-EMP Economic and management principles

ΚZ

4

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 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: Compulsory elective economic-management courses

Minimal number of credits of the block: 4

The role of the block: VE

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

Name of the group: Compulsory Elective Economics Bachelor Courses, Part-time Form of Study, in Czech,

Ver. 2015

Requirement credits in the group: In this group you have to gain at least 4 credits (at most 5)

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

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
BIK-MEK	Macroeconomic Context of Domestic and World Economy Ivo Straka	KZ	4	13KP+2KC	L	VE
BIK-PRP	Law and Business Zden k Ku era	Z,ZK	4	13KP+4KC	L	VE
BIK-PRR.21	Project management David Pešek David Pešek Petra Pavlí ková (Gar.)	Z,ZK	5	14KP+4KC	Z	VE

Characteristics of the courses of this group of Study Plan: Code=BIK-PV-EM.2015 Name=Compulsory Elective Economics Bachelor Courses, Part-time Form of Study, in Czech, Ver. 2015

BIK-MEK	Macroeconomic Context of Domestic and World Economy	KZ	4
This course is presente	d in Czech.		
BIK-PRP	Law and Business	Z,ZK	4
Students understand th	e basic issues when engaging in business activities in the CR and in the EU. Students learn to establish companies, gain nece	essary business p	ermits, conclude
commercial or civil conf	tracts. Students also get acquainted with the principles of antitrust regulation and learn to resolve disputes in the area of busi	ness, labour, or ci	vil relationships
in courts.			
BIK-PRR.21	Project management	Z,ZK	5

Project management not only as a common dictionary and setting necessary processes while preparing and / or managing projects, but also as a social art. 20 years of experience not only in IT in various positions and different projects available at your hands.

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:

Ze skupiny je nutné absolvovat jeden ze dvou předmětů, představujících interní zkoušku z angličtiny. -- 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 (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 (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	ne BIE-ECC course can be recognized for any active semester after the submission of a certificate certificate that demonstrates their proficiency in English comparable to or exceeding				
the B2 level of the Com	mon 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: Compulsory elective humanities courses

Minimal number of credits of the block: 2

The role of the block: VH

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

Name of the group: Compulsory Elective Humanity Courses of Bc. Program Informatics, Part-time Form, in Czech, Ver. 2015

Requirement credits in the group: In this group you have to gain at least 2 credits (at most 20)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 9)

Credits in the group: 2

Note on the group:

Note on the grot	<i>ι</i> ρ.					
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
FI-FIL	Philosophy Peter Zamarovský Peter Zamarovský (Gar.)	ZK	2	2P	Z,L	VH
BIK-HMI	History of Mathematics and Informatics Alena Šolcová Alena Šolcová (Gar.)	ZK	3	13KP+2KC	L	VH
FI-HTE	History of Technology and Economics Jan Mikeš, Marcela Efmertová Jan Mikeš Jan Mikeš (Gar.)	ZK	2	2+0	Z,L	VH
FI-HPZ	Humanities subject from a study abroad Miroslav Balík	Z	3	0+0	Z,L	VH
FI-MPL	Managerial Psychology	ZK	2	2+0	Z,L	VH
FI-KSA	Cultural and Social Anthropology Jakub Šenovský	ZK	2	2P	L,Z	VH
BIK-KSA	Cultural and Social Anthropology Alena Libánská, Tomáš Houdek, Jakub Šenovský Jakub Šenovský Alena Libánská (Gar.)	ZK	2	13KP	L	VH
FI-ULI	Introduction to Linguistics for Computer Václav Cvr ek	ZK	2	2P	L	VH
FI-GNO	Introduction to Gnoseology Ivo Janoušek	ZK	2	2+0	L	VH

Characteristics of the courses of this group of Study Plan: Code=BIK-PV-HU.2015 Name=Compulsory Elective Humanity Courses of Bc. Program Informatics, Part-time Form, in Czech, Ver. 2015

FI-FIL	Philosophy	ZK	2
see A0B16			
BIK-HMI	History of Mathematics and Informatics	ZK	3
This course is pres	ented in Czech.		
FI-HTE	History of Technology and Economics	ZK	2
The course introdu	ces the scientific disciplines of history and technology, economic and social history of the Czech lands and Czechoslovakia in c	omparison with the	development of
the European region	on 19 to 21 century.		
FI-HPZ	Humanities subject from a study abroad	Z	3
A "Humanities sub	ect that has been studied abroad" is covered by the Humanities subject from a study abroad in Compulsory Humanities Module	that is required in t	he curriculum.
The substitution is	approved by the Vice-Dean for study affairs on behalf of the Dean at the request of the student.		
FI-MPL	Managerial Psychology	ZK	2
FI-KSA	Cultural and Social Anthropology	ZK	2
The one-semester	course aims to acquaint students with the basics of social and cultural anthropology as a scientific discipline dealing with the div	ersity of the world	 examples from
anthropological res	earch from our "exotic" cultures (topics: kinship, religion, social exclusion, migration, globalization, , material culture, language, h	nealth, history, deat	h, etc) will be
shown. The course	is an interesting alternative to other humanities, taught at FIT.		
BIK-KSA	Cultural and Social Anthropology	ZK	2
The one-semester	course aims to acquaint students with the basics of social and cultural anthropology as a scientific discipline dealing with the div	ersity of the world	- examples from
anthropological res	earch from our culture as well as from the "exotic" ones (topics: kinship, religion, social exclusion, migration, globalization, , materi	al culture, language	, health, history,
death, etc). The	course is an interesting alternative to other humanities, taught at FIT.		
FI-ULI	Introduction to Linguistics for Computer	ZK	2
This course is pres	ented 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 dou a um ním. F	Rozborem d jin
modernismu a myš	elenkových proud 20. století jsou ukázány prom ny paradigmat a p evrat k postmodernismu, analýzou paralelism ve v d a um	ní odhaleny mech	anismy tv r ích
proces . V návazno	osti na teorii pírodních jazyk a sémiotiky je vedena diskuze i o kognitivních procesech, v historickém pehledu nastín na hlediska	estetického vnímá	ní. Samostatnou
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 roz	voje. P edm t p ed	náší a garantuje
Ing. Ivo Janoušek (CSc.		

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

The role of the block: V

Code of the group: BIK-V.2017

Name of the group: Purely Elective Courses of Bachelor Programme BI, Version 2017

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0

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
BIK-STO	Storage and Filesystems Ji í Kašpar	Z,ZK	4	13KP+4KC	L,Z	V
BIK-EJA	Enterprise Java Ji í Dan ek	KZ	4	13KP+4KC	Z	V
BIK-HMI	History of Mathematics and Informatics Alena Šolcová Alena Šolcová (Gar.)	ZK	3	13KP+2KC	L	V
BIK-SQL.1	Language SQL Michal Valenta Michal Valenta (Gar.)	KZ	4	13KP+4KC	L	V
BIK-OOP	Object-Oriented Programming Filip K ikava Filip K ikava (Gar.)	Z,ZK	4	14KP+4KC	Z	V
BIK-PJV	Programming in Java Jan Blizni enko Jan Blizni enko (Gar.)	Z,ZK	4	13KP+4KC	Z	V
BIK-PRR.21	Project management David Pešek David Pešek Petra Pavlí ková (Gar.)	Z,ZK	5	14KP+4KC	Z	V
BIK-PKM	Introduction to Mathematics Karel Klouda Tomáš Kalvoda (Gar.)	Z	4		Z	V
TVV	Physical education	Z	0	0+2	Z,L	V
TV1	Physical Education	Z	0	0+2	Z	V
TVV0	Physical education	Z	0	0+2	Z,L	V
TV2K1	Physical Education 2	Z	1		L	V
BIK-ZWU	Introduction to Web and User Interfaces Ji í Pavelka	Z,ZK	4	13KP+4KC	Z	V

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

BIK-OOP	Object-Oriented Programming	Z,ZK	4
This course is pres	sented in Czech. Object-oriented programming has been used in the last 50 years to solve computational problems by using	ng graphs of objects that colla	borate togethe
oy message passir	ng. In this course we look at some of the main principles of object-oriented programming and design. The emphasis is on p	practical techniques for softwa	re developmer
ncluding testing, e	error handing, refactoring and design patterns.		
BIK-PRR.21	Project management	Z,ZK	5
	ent not only as a common dictionary and setting necessary processes while preparing and / or managing projects, but al	so as a social art. 20 years of	experience no
only in IT in variou	is positions and different projects available at your hands.		
3IK-HMI	History of Mathematics and Informatics	ZK	3
his course is pres	sented in Czech.		
BIK-STO	Storage and Filesystems	Z,ZK	4
	arn principles and current solutions of storage systems architecture. The module explains principles of data store, protec	ction, and archiving, as so as	storage scalino
oad balancing and	d high availability.		
3IK-EJA	Enterprise Java	KZ	4
he course covers	s Java technologies (Jakarta EE, Microprofile, etc.) which are used for the development of EIS (Enterprise Information Sy	stems). These applications ty	pically manag
ersistent data, ar	e accessible to clients via the REST API and are created in the microservice architecture and deployed into orchestrate	ed containers.	
3IK-SQL.1	Language SQL	KZ	4
	n knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL la	• • •	
	queries, OLAP support, object-relational constructions. Part of the course is dedicated to practical database optimization f	· · · · · · · · · · · · · · · · · · ·	
	exes, clusters, index-organized tables, and materialized views. as well as from the point of view query optimization. Exec	•	•
	Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are ba	sed on Oracle DBMS and pa	rtially on
PostgreSQL.			
3IK-PJV	Programming in Java	Z,ZK	4
	sented in Czech. However, there is an English variant in the full-time program Informatics (B1801 / 4753).		
3IK-PKM	Introduction to Mathematics	Z	4
his course is pres	sented in Czech.		
	Physical education		
VV	1 Hysical education		0
	Physical Education	Z	0
ΓVV ΓV1 ΓVV0		Z	
ΓV1	Physical Education		0
TV1 TVV0	Physical Education Physical education	Z	0

Code of the group: BIK-WSI-SI-VO.2017

Name of the group: Elective Vocational Courses for a Bachelor Specialisation BIK-WSI-SI, 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 grou	•	bolu a zamerei	ıı 5 vyjiii	ikou ton	Olo Zamen	em
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
BIK-ADU.1	Unix Administration	Z,ZK	5	14KP+4KC	L	V
BIK-ADW.1	Windows Administration Miroslav Prágl	Z,ZK	4	14KP+2KC	Z	V
BIK-ADS	Network Administration Viktor erný	Z,ZK	5	13KP+4KC	Z	V
BIK-AWD	Web and Database Server Administration Lukáš Ba inka	Z,ZK	4	13KP+4KC	L	V
BIK-APS.1	Architectures of Computer Systems Pavel Tvrdík	Z,ZK	5	14KP+4KC	Z	V
BIK-BEK	Secure Code Róbert Lórencz	Z,ZK	5	14KP+4KC	L	V
BIK-EFA	Efficient Algorithms Ji í Chludil	Z,ZK	5	13KP+4KC	Z	V
BIK-EIA	Efficient Implementation of Algorithms Ivan Šime ek	Z,ZK	5	13KP+4KC	Z	V
BIK-GRA	Graph Algorithms Ji i Chludil	Z,ZK	5	13KP+4KC	L	V
BIK-HWB	Hardware Security Ji í Bu ek, Róbert Lórencz Ji í Bu ek Róbert Lórencz (Gar.)	Z,ZK	5	14KP+4KC	Z	V
BIK-JPO	Computer Units Kate ina Hyniová	Z,ZK	5	13+4	Z	V
BIK-MGA	Multimedia and Graphics Applications Lukáš Ba inka Lukáš Ba inka (Gar.)	Z,ZK	5	13KP+4KC	Z	V
BIK-OMO	Object Modeling Robert Pergl	Z,ZK	5	13KP+4KC	Z	V
BIK-PGR	Computer Graphics	Z,ZK	6	13KP+4KC	Z	V
BIK-PWT	Enterprise Web Technologies	Z,ZK	5	2+2	L	V

BIK-PNO	Practical Digital Design Kate ina Hyniová	KZ	5	13+4	Z	V
BIK-PRP	Law and Business Zden k Ku era	Z,ZK	4	13KP+4KC	L	V
BIK-PJP	Programming Languages and Compilers Karel Müller	Z,ZK	5	13KP+2KC	L	V
BIK-SKJ	Scripting Languages Lukáš Ba inka	Z,ZK	4	13KP+2KC	L	V
BIK-SSB	System and Network Security Ji í Dostál Ji í Dostál Ji í Dostál (Gar.)	Z,ZK	5	14KP+4KC	Z	V
BIK-SRC	Real-time Systems Jan Šlechta	KZ	4	13+4	L	V
BIK-TIS	Information Systems Design	Z,ZK	5	13KP+2KC	Z	V
BIK-TUR	User Interface Design Jan Schmidt	Z,ZK	4	13KP+4KC	L	V
BIK-WT2	Web Application Design Peter Vojtáš	Z,ZK	5	13KP+4KC	L	V
BIK-FIP	Accounting and Corporate Finance	Z,ZK	5	13KP+4KC	Z	V
BIK-VES	Embedded Systems Miroslav Skrbek	Z,ZK	5	13KP+4KC	L	V
BIK-VWM	Searching the Web and Multimedia Databases Ji í Novák	Z,ZK	5	13KP+2KC	L	V
BIK-VZD	Data Mining Pavel Kordik	Z,ZK	4	13KP+4KC	L	V
BIK-WT1	Web Technology I (Web and Multimedia) Tomáš Kadlec	Z,ZK	5	13KP+2KC	Z	V

			1	I I		
BIK-WT2	Web Application Design Peter Vojtáš	Z,ZK	5	13KP+4KC	L	V
BIK-FIP	Accounting and Corporate Finance	Z,ZK	5	13KP+4KC	Z	V
BIK-VES	Embedded Systems Miroslav Skrbek	Z,ZK	5	13KP+4KC	L	V
BIK-VWM	Searching the Web and Multimedia Databases Ji i Novák	Z,ZK	5	13KP+2KC	L	V
BIK-VZD	Data Mining Pavel Kordík	Z,ZK	4	13KP+4KC	L	V
BIK-WT1	Web Technology I (Web and Multimedia) Tomáš Kadlec	Z,ZK	5	13KP+2KC	Z	V
Specialisation BIK-W BIK-PRP La	courses of this group of Study Plan: Code=BIK-WSI-SI-VO.2017 SI-SI, Version 2017 w and Business sic issues when engaging in business activities in the CR and in the EU. Students learn			Z,	ZK	4
commercial or civil contracts in courts.	s. Students also get acquainted with the principles of antitrust regulation and learn to re		_	of business, lab	oour, or civil	relationships
Students became familiar wit use. In the seminars they will They gain theoretical and pra	ix Administration the the internal structure of Unix-like systems, with the administration of their basic subsy all verify the information from the lectures on real life examples from practice. They will use actical knowledge of tools for tracking, analyzing, debugging and securing systems, importance file systems, name services, remote access, and system boot.	understand the di	fferences b	s of their protect etween user a	and administ	rator roles.
	ndows Administration			Z,	,ZK	4
Ethernet technology, VLAN, addressing, administration of BIK-AWD W6 Student in the branch "BI-IT a block lectures. Students are systems of database and we	eneeded to administrate computer networks, networking technologies, services, and to authorisation, security architecture of computer networks, routing protocols and backle of networking equipment, secure client connections and secure data transfer, flow control and Database Server Administration Information technology" who lack the compulsory BIK-AWD course, ask the office of size introduced to the administration of database and web servers and services. Students be services. To provide a balanced overview, students will be introduced to three different presentative of a complex and advanced open-source, community-developed software	one routing mechanisms, and mechanisms, and affairs for ends will be able to interest addadase engine	nanisms, di and service rolling an e stall, config es: Oracle a	rectory and na availability m Z, quivalent cour gure, maintain, s a representa	aming servic onitoring. ,ZK se BIK-AWD test and bac tive of a larg	4 11, which has ckup complexe commercia
·	chitectures of Computer Systems			Z,	ZK	5
	cure Code			7.	ZK	5
The students will learn how to theory, students gain practic administrator privileges. Dar security and database syste	o assess security risks and how to take them into account in the design phase of their or all experience with running programs with reduced privileges and methods of specifying agers inherent in buffer overflows will be practically demonstrated. Students will be introms, web, remote procedure calls, and sockets in general. The module concludes with	g these privileges oduced to the prir	s, since not nciples of s	getting familia every prograr ecuring data a d the defense	ar with the the m needs to relate against then	reat modeling un with onships of n.
Students get a solid overview data structures. Students are	icient Algorithms v of efficient algorithms for solving classical algorithmic problems: selecting, searching, e able to design and implement such algorithms, to analyse their complexity, and to de to recognise a proper algorithm variant for any specific usage.	-		ns of reshapin		_
Student learn to combine the learn the basics of code tuni	-	es of the particula	ar processo		ZK architecture	5 e). Students
Students get an overview of in the BI-EFA module. They problems). Students get bas	aph Algorithms typical usages of graph models in computing. They learn algorithmic methods of soluti understand algorithms for the key application domains of graph theory (flows in netwo ic competence in computer science background: they understand Turing machine mod	ks, heuristic sear	rch, approx	the programm imation of con eteness and N	nplex probler IP-hardness	ms, matching
The course deals with hardv	ardware Security ware resources used to ensure security of computer systems including embedded onesecurity features of modern processors, and storage media protection through encrypt			iliar with the o		•

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.

BIK-NPO Computer Units Survivalence of the internal and substantial of computer to processor compromets and their interfacing with the environment, the sugarisation of main memory and don't internal returnative (deceases). LPC, LPTO, and CAMfand with design methodology for the control unit and outcoment, the sugarisation of main memory and don't internal sugarisation. A complex project internal processor and processor				
and other internal memorines (submisseable, LIFG, PRC), and CANighard with design methodology for the control unit and crannicilles, basic principles of communications with periphral devices and studies. BIK-MOA Multimedia and Graphics Applications is 2000 gaphes and OTP: as well as with basic methods of creating and editing computer graphics. Subdems learn theoretical informationals of computer or problems. During this servators: a variety of the computer or problems or the computer or problems. During the servators: a variety of the computer or problems or the computer of the computer or problems or the computer of the computer or problems or computer or problems or the computer or problem	BIK-JPO	Computer Units	Z,ZK	5
devotes and busets. BIK-MGA Multimedia and Graphics Applications Subdisting gain practical experiences with application for 20:00 graphics and DTP, as well as with basic methods of creating and editing corpus graphics. Subdistins Issuer in the interiorists introductionally and provided provided in the interiorists of introductional provided provided in the interiorists of introduction with a provided provided provided in the interiorists of introduction with a complete graphics. During the semination of the interiorists of introduction and the interiorists of provided			•	•
BIK-MA Multimedia and Graphics Applications Modern pair procedure specific severable specific process project in society and process. Applications to 2000 projects and offer projects and offer projects and offer projects and offer projects. Applications to 2000 project projects and offer projects will be annotherable of process. Applications of project projects and offer projects will be annotherable of projects and offer projects. Applications are also projects and offer projects and offer projects and offer projects and offer projects. Applications are also projects and offer projects. And offer projects are also projects and offer projects and		pries (addressable, LIFO, FIFO, and CAM)and with design methodology for the control unit and controllers, basic principles of	of communication	with peripheral
Suddents apin practical experiences with applications for 20:00 graphics and DTP; as well as with basic methods of creating and defining computer graphics. Surface to subtractional transferred for transferred for the computer graphics and DTP. BIK-OMO Object Modeling of business structures, they will learn fundamentals of CinetUMI, nutation and methodology. Students will practically master computer model to deput optical creations, and the process of proces		Multimodia and Graphics Applications	7 7K	
Incidentified of computer graphics. During the semisest, students work on various parts of a complex project involving 2000 graphics and DTP. Students will practically master conceptual modelling of business structures, they will learn hundramentals of Cintrol.M.L. notation and methodology. Students will learn hundramentals of pure degree criterial practices and justices used to depend in the part of the parts of the		• • •	1 1	_
BIK-PKO OD Object Modeling Suders will practically master consequent modelling of business structures, they will learn fundamentals of DresUML notation and methodology. Suders will learn to transform and pure object-oriented paradigm, i.e. terms object, method, message, dase, class instance, composition, theritance, collections. Students will learn to transform a conseptual model to deplet-oriented implementation of our device use of the consequence of the conseq			apriles. Otaderits it	Jam meoretical
Suchers will practically mosteric conceptual modelling of bosiness structures, they will learn fundamentals of DimbUML. notation and methodology. Students will learn fundamentals of pure object-criented projects granting and grant color. Students will learn fundamentals of pure object-criented implementation model and they will learn fundamentals of pure object-criented implementation model and they will learn fundamentals of pure object-criented implementation in Smalltask and pure object debthase. Students will learn fundamentals of pure object-criented implementation model and they will learn fundamentals of pure object-criented implementation, to design the scene, add textures imitiating generated cestals and materials (like well surface, wood, sky), and set up the lighting. At the same time, they undestand the fundamental principles and terms used in computer graphics, such as graphical planeing, comparements transformations, or injurishments, or lighting produced in the position of the position of comparison of the implemental principles and terms used in computer graphics, such as graphical planeing, comments to a computer graphics, and in recommendation of the position of the position of comparison of the internal positions of the interna			Z.ZK	5
copect-oriented implementation model and they will learn fundamentals of pure object-oriented implementation in Smalltalk and pure object database. Inch Computer Graphics Z.K 6	Students will practically		1 ' 1	undamentals of
nulse and quaries upon the object database. EXEMPTICAL Computer Graphics Suddens are able to program a simple interactive 30 graphical application like a computer game or scientific visualisation, to design the science, add textures imitating geometric details of an articular like was always and an articular like was under a science of the policy of the polic				
BIK-PR Computer Graphics Suddents are able to program a unique interactive 30 graphical application like a computer garne or scientific visualisation, to design the soon, act the tourise initiating sound interactive 30 graphical papelines or program a graphic propries and terms used in computer graphics, such as graphical papeline, opening, committee of the soon and terms used in computer graphics, and representations, or lighting model. They gain knowledge allowing orientation in computer graphics, and representations, and scientific visualisation. BIK-PWT Enterprise Web Technologies Techn			e. Students will lea	arn to formulate
Slucestes are able to program a simple interactive 3D graphical application like a computer game or scientific visualisation, to design the case, and textures initiating generator data and materials (like visual surface, wood, sky), and set up the lighting, at the same time, they understand the finationarists interprises and terms used to computer graphics, part graphical presents a plant part of the program			7 71/	
and materials (like wall surface, wood, sky), and set up the lighting. At the same time, they understand the fundamental principles and terms used in computer graphics, such as graphical poleline, generator transformations, or lighting modes in they gain knowledge allowing orientation in computer graphics, and represented in documental or surface, and scientific visualisation. BIK-PVMT Enterprise Web Technologies Client pedm tu je seznámit subtenty s využitím vebu jako platformy pro vytké en itikuled in geometro modelling, modelling of curves and surfaces, and scientific visualisation. Elik-PVMT Enterprise Web Technologies Historica and in the surface of			1 ' 1	_
gambias pipeline, geometric transformations, or lighting model. They gain knowledge allowing orientation in corrower gambias, and representing sold fundamentals for your professional development, e.g. do 6 PCP programming and animations. They gain knowledge allowing orientation in corrower gambias. Por programming and animations. They gain knowledge allowing collections and the product of the programming and animations. They gain they large the programming and animations. They gain they are allowed they are all	· ·			
BIK-PVT Enterprise Web Technologies Science Scie	,			
Clemp ne dm up is sezrafinit studenty a využitim webu jako platformy pro vyvte eri Rich Internet Applications (RIAL) Protos er musi I nau It použhvat webove charchoolgie z Netelaks prezenta in a size webove)-sh strake a trienzake su živarbienia m tady s technologiem HTML_CSS a warescript. Dale en usa in narwhorat siteratives webove application in the protos of the contemporary tighted esign flow and learn practical skills to use synchronous design technologie effektivit komunikace mezi internation of the contemporary tighted lesign flow and learn practical skills to use synchronous design technologie effektivit komunikace mezi internation to extend the basics of the VHDL language, and implementation technologies FPGA and ASIC. Students demonstrate practical use of the design technologies in the module project sing modern, industry-standard CAD design flow and implementation technologies FPGA and ASIC. Students demonstrate practical use of the design technologies in the module project sing modern, industry-standard CAD design flows and implementation of common high-level programming languages. Place and the design and implementation of technologies parts to a simple programming language in the data by the second to the design and implementation of technologies parts to a simple programming language in the data by the second to a simple programming language in the data by the second to a simple programming language. But setted to all other programming languages to the programming languages. But setted to all other programming languages and processing text in a language defined by a LL(1) grammar. BIK-SKD Scripting Languages BIK-SKD Scripting Languages System and Network Security This course is bousted on selected areas of designing and computer systems in terms of cyber security BIK-SKD Real-time Systems Substitute to have a selected areas of designing situation appears to the selected areas of designing situation appears to the selected areas of designing situation appears to the selected areas of designin	development, e.g. for GI	PU programming and animations. They get used to techniques utilised in geometric modelling, modelling of curves and surfa	ces, and scientific	visualisation.
prezenta ni dati webov/ch strianek a interactors subvatelema stedy a technologiem ITML. CSS a Javascrini, Dale se nau I parkmout a relatizovar webovou apilikaci. Pro realizaci serverow strans para ni I jazy. Phil Budou un trealizoura apilikace se sabezpe en/mp i stupem a použivat technologie eficikini komunikace maz kilaterina as serverum. BIK-PNO Practical Digital Design Sudents gata no everview of the contemporary digital design flow and learn practical skilat to use synchronous design techniques. They undestand the basics of the VHOL language, and implementation technologies FPGA and ASIC. Students demonstrate practical use of the design techniques in the module project sing modern, industry-standard CAD design totals. BIK-PJP Programming Languages and Compilers Sudents master base methods of implementation of common high-level programming languages. They get experience with the design and implementation of individual compiler parts for a simple programming language, and a size as a size of the size of t		, · · · · · · · · · · · · · · · · · · ·	1 ' 1	_
Services strange set must jazyk PHP Budou un trealizowat apilitaria se szabezpe eným p Istupem a používat technologie efektivní komunikace mezi klientem a servicerem				
BIK-PNO Practical Digital Design Students get an overview of the contemporary digital design flow and learn practical skills to use synchronous design techniques. They understand the basics of the VHDL language, and implementation technologies FPGA and ASICs. Students demonstrate practical use of the design techniques in the module project sing modern, industry-standard CAD design tools. BIK-PUP Programming Languages and Compilers Students master basic methods of implementation of common high-level programming languages. They get experience with the design and implementation of individual compiler parts or a simple programming language shad types, subrounders, and data subractions. Students are able to formally specify a translation of a text that has a certain syntax into a target form and write a compiler based on such a specification. The notion of compiler in this context is not limited to compilers of programming languages, but extends to all other programs for parsing and processing text in a language defined by a LL(1) grammar. BIK-SKI Scripting Languages Strike Scripting Languages INITIAL Scripting Languages Cark 4 **This course is presented in Cazch Scripting Languages and computer systems in terms of cyber security Scripting Languages Scripting Langua	·		•	
Students get an overview of the contemporary digital design flow and learn practical skills to use synchronous design techniques. They understand the basics of the VHDL language, and implementation techniques in the module project sing modern, industry-standard CAD design tools. BIK-PUP Programming Languages and Compilers Z,ZK 5 Students master basic methods of implementation of common high-level programming languages. They get experience with the design and implementation of individual compiler parts for a simple programming language, data types, subroutines, and data abstractions. Students are able to formally specify a translation of a text with the sa cortain syntax into a target for mand write a compiler based on such as specification. The notion of compiler in this context is not limited to compilers of programming languages, but extends to all other programs for parsing and processing text in a language defined by a LL(1) grammar. BIK-SKD Scripting Languages Z,ZK 4 This course is presented in Czech. BIK-SSE 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 BIK-STE Information Systems Z,ZK 5 Students know various types of ISs and their practical implementation aspects and are able to match the needs of different market segments (customers) with applications of existing technologies (databases, programming languages, GUI etc.). BIK-TIR Information Systems Design Z,ZK 4 Students have a basic overview of the methods for designing and testing common user interfaces. They have experience to solve the problems where software and other products of users are not taken into account during product development. Students gain overview of the methods that bring users into the development process to ensure optimal communication with a user. BIK-TIR Web Application Design Z,ZK 5 Students know the principles and practicalities of francing and downward of the principle and developm				
and implementation technologies FPGA and ASIC. Students demonstrate practical use of the design techniques in the module project sing modern, industry-standard CAD design BIK-PJP Programming Languages and Compilers Students master basic motivations of might be programming languages. They get experience with the design and implementation of common high-level programming languages, but extends to all supers in the common language data types, subtroutines, and data abstractions. Students are able to formally specify a translation of a text that has a certain syntax into a target form and write a compiler based on such a specification. The notion of compiler in this context is not limited to compilers of programming languages, but extends to all other programs for parsing and processarily to a language defined by a LL(1) grammar. BIK-SIX Sorphing Languages Sorphing Languages			1	
Inclusion BIK-PUP Programming Languages and Compilers Sudents master basic methods of implementation of common high-level programming languages. They get experience with the design and implementation of individual compiler parts for a simple programming language, data types, subroutines, and data abstractions. Students are able to formally specify a translation of a text that has a certain syntax into a target for mand write a compiler based on sous has specification. The notion of compiler in this context is not limited to compilers of programming languages where the data are compiler to the programs for parsing and processing text in a language defined by a LL(1) grammar. BIK-SKB Solitary Languages Z,ZK 4 BIK-SSB System and Network Security This course is bloosed on selected areas of computer networks and computer systems in terms of cyber security BIK-SRC Real-time Systems Real-time Systems REAL A Such Students get basic knowledge in the area of designing SW for embedded systems with a real-time operating system (RTOS). BIK-TIS Information Systems Design Students know various types of ISs and their protection implementation aspects and are able to match the needs of different market segments (customers) with applications or existing technologies (databases, programming languages, GUI etc.). BIK-TIR User Interface Design Students have a basic overview of the methods for designing and testing common user interfaces. They have experience to solve the problems where software and other products do not communicate with the user optimally, since the needs and characteristics of users are not taken in account during product development. Students gain an overview of the methods to the development process to ensure optimal communication with a user. BIK-WIZ Web Application Design Students was able to design and implement a complete web application (both the client side and the server side). PHP is the most popular programming language for this module. Students is easi to design and implement process to en	_			
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	or a web application.			

List of courses of this pass:

Code	Name of the course	Completion	Credits
BI-ANG	English Language, Internal Certificate Course information and teaching materials can be found at https://moodle-vyuka.cvut.cz/course/search.php?search=BI-AN	ZK IG	2
BI-ANG1	English Language Examination without Preparatory Courses	Z,ZK	2
BI-BAP	Bachelor Thesis	Z	14
BIE-EEC	English language external certificate	Z	4
The BIE-ECC course	e can be recognized for any active semester after the submission of a certificate certificate that demonstrates their proficiency in Engl the B2 level of the Common European Framework of Reference for Languages.	ish comparable to c	or exceedin
BIK-AAG	Automata and Grammars	Z,ZK	6
	ced to basic theoretical and implementation principles of the following topics: construction, use and mutual transformations of finite	1	1
and regular gramma	ars, translation finite automata, construction and use of pushdown automata, hierarchy of formal languages. Knowledge acquired th to creation of algorithms for pattern matching, data compression, translation, simple parsing, and creation of digital circuit	_	s applicabl
BIK-ADS	Network Administration	Z,ZK	5
Ethernet technological	sic skills needed to administrate computer networks, networking technologies, services, and to ensure their security. They understa ogy, VLAN, authorisation, security architecture of computer networks, routing protocols and backbone routing mechanisms, director administration of networking equipment, secure client connections and secure data transfer, flow control mechanisms, and service	ry and naming serv	rices and
BIK-ADU.1	Unix Administration	Z,ZK	5
	miliar with the internal structure of Unix-like systems, with the administration of their basic subsystems and with the principles of their	1 '	1
	rs they will verify the information from the lectures on real life examples from practice. They will understand the differences between	_	
They gain theoretical	l and practical knowledge of tools for tracking, analyzing, debugging and securing systems, implementing and managing file system	s, disk subsystems	, processes
	memory, network services, shared file systems, name services, remote access, and system boot.		
BIK-ADW.1	Windows Administration	Z,ZK	4
	This course is presented in Czech.		
BIK-AG1	Algorithms and Graphs 1 This course is presented in Czech.	Z,ZK	6
BIK-APS.1	Architectures of Computer Systems	Z,ZK	5
5	This course is presented in Czech.	_,_,	, ,
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BIK-EJA			
	Enterprise Java	KZ	4
	Java technologies (Jakarta EE, Microprofile, etc.) which are used for the development of EIS (Enterprise Information Systems). These sistent data, are accessible to clients via the REST API and are created in the microservice architecture and deployed into orchestra		ally manage
BIK-EMP	Economic and management principles	KZ	4
	ned to fundamental problems of business economy. The course makes students familiar with a life cycle of business, specifically with		
	nto state economic environment (CR), management of property and capital structure, business transaction records keeping during a		
3	between business production and costs, evaluation of enterprise financial health and business rehabilitation or termination	٥.	.,
BIK-FIP	Accounting and Corporate Finance	Z,ZK	5
D	Students know the principles and practicalities of financing and financial policies of companies or organisations.	_,	' '
BIK-GRA	Graph Algorithms	Z,ZK	5
_	erview of typical usages of graph models in computing. They learn algorithmic methods of solution of graph problems, using the progr	,	
-	le. They understand algorithms for the key application domains of graph theory (flows in networks, heuristic search, approximation of		
	tudents get basic competence in computer science background: they understand Turing machine models and issues of NP-complete		, ,
BIK-HMI	History of Mathematics and Informatics	ZK	3
DITTIVII	This course is presented in Czech.	213	' '
BIK-HWB	Hardware Security	Z,ZK	5
	riardware Gecurity s with hardware resources used to ensure security of computer systems including embedded ones. The students become familiar wit	'	
	ules, the security features of modern processors, and storage media protection through encryption. They will gain knowledge about v		-
	nel 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		
BIK-JPO	Computer Units	Z.ZK	5
	ledge of the internal structure and organisation of computer or processor components and their interfacing with the environment, the	,	
	memories (addressable, LIFO, FIFO, and CAM)and with design methodology for the control unit and controllers, basic principles of c		
	devices and buses.		
BIK-KOM	Conceptual Modelling	Z,ZK	5
BIK-KSA	Cultural and Social Anthropology	ZK	2
	cultural and Social Arthropology course aims to acquaint students with the basics of social and cultural anthropology as a scientific discipline dealing with the diversit		
	earch from our culture as well as from the "exotic" ones (topics: kinship, religion, social exclusion, migration, globalization, , material cu	•	
antinopologicaries	death, etc). The course is an interesting alternative to other humanities, taught at FIT.	iture, iariguage, rie	aitii, fiistory,
BIK-LIN		Z.ZK	7
	Linear Algebra Ind the theoretical foundation of algebra and mathematical principles of linear models of systems around us, where the dependencies	,	
	he basic methods for operating with matrices and linear spaces. They are able to perform matrix operations and solve systems of linear linear spaces.		- 1
•	hese mathematical principles to solving problems in 2D or 3D analytic geometry. They understand the error-detecting and error-corre	•	y can apply
BIK-MEK	Macroeconomic Context of Domestic and World Economy	KZ	4
DIN-WEN	This course is presented in Czech.	1\Z	+
RIK-MGA		7 7K	5
BIK-MGA Students gain prac	Multimedia and Graphics Applications	Z,ZK	5 theoretical
Students gain prac	Multimedia and Graphics Applications tical experience with applications for 2D/3D graphics and DTP, as well as with basic methods of creating and editing computer graph	ics. Students learr	_
Students gain prac	Multimedia and Graphics Applications tical experience with applications for 2D/3D graphics and DTP, as well as with basic methods of creating and editing computer graph undamentals of computer graphics. During the semester, students work on various parts of a complex project involving 2D/3D graphi	ics. Students learr	theoretical
Students gain prace f	Multimedia and Graphics Applications tical experience with applications for 2D/3D graphics and DTP, as well as with basic methods of creating and editing computer graph undamentals of computer graphics. During the semester, students work on various parts of a complex project involving 2D/3D graphi Mathematical Logic	ics. Students learr cs and DTP. Z,ZK	theoretical 5
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		-			
BIK-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				
form and write a compiler based on such a specification. The notion of compiler in this context is not limited to compilers of programming languages, but extends to all other program					
	for parsing and processing text in a language defined by a LL(1) grammar.		p 3		
BIK-PJV	Programming in Java	Z,ZK	4		
	This course is presented in Czech. However, there is an English variant in the full-time program Informatics (B1801 / 4753)				
BIK-PKM	Introduction to Mathematics	Z	4		
	This course is presented in Czech.				
BIK-PNO	Practical Digital Design	KZ	. 5		
_	verview of the contemporary digital design flow and learn practical skills to use synchronous design techniques. They understand the ion technologies FPGA and ASIC. Students demonstrate practical use of the design techniques in the module project sing modern, in				
and implementat	tools.	dustry-staridard C/	AD design		
BIK-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 calcul	us and on Lisp (Racket) and Prolog programming languages. Moreover, usage of these principles is demonstrated on modern mainstr	eam programming	languages		
	such as C++ and Java.				
BIK-PRP	Law and Business	Z,ZK	4		
	nd the basic issues when engaging in business activities in the CR and in the EU. Students learn to establish companies, gain necessary				
commercial or civ	l contracts. Students also get acquainted with the principles of antitrust regulation and learn to resolve disputes in the area of busines in courts.	s, labour, or civil re	elationsnips		
BIK-PRR.21	Project management	Z,ZK	5		
	ent not only as a common dictionary and setting necessary processes while preparing and / or managing projects, but also as a social		-		
,	only in IT in various positions and different projects available at your hands.				
BIK-PS1	Programming in Shell 1	KZ	5		
	advanced and knowledgeable users of common UNIX-like operating systems. They understand the fundamental principles of the operation	erating systems (file	e systems,		
processes and thre	eads, access rights, memory management, network interfaces). They gain the knowledge of advanced users, with hands-on experience	of the shell, basic	commands,		
	and filters.				
BIK-PSI	Computer Networks	Z,ZK	5		
	nd the basic common techniques, protocols, technologies, and algorithms necessary to communicate in computer networks. The topic				
2nd to 4th layer	of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students values in the interval of the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students values in the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students values in the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students values in the ISO OSI model. They also get a basic understanding of communication media, security, and network administration. Students values in the ISO OSI model is the ISO OSI media of the	viii de adie to write	a simple		
BIK-PST	Probability and Statistics	Z,ZK	5		
	duced to elements of probability thinking, ability of the synthesis both prior and posterior information and use to work with random varia	·	-		
	nodels of the distribution of random variables and to solve applied probability problems in the area of informatics and computer science	•			
methods, they mas	ster methods of statistical inference to estimate unknown population parameters on the basis of sample. They get acquainted with basic	methods of the de	etermination		
	of possible statistical dependence of two or more random variables.				
BIK-PWT	Enterprise Web Technologies	Z,ZK			
	je seznámit studenty s využitím webu jako platformy pro vytvá ení Rich Internet Applications (RIA). Proto se musí nau it používat we	_			
•	i webových stránek a interakce s uživatelem a tedy s technologiemi HTML, CSS a Javascript. Dále se nau í navrhnout a realizovat we any se nau í jazyk PHP. Budou um t realizovat aplikace se zabezpe eným p ístupem a používat technologie efektivní komunikace m	•			
BIK-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, inpu				
	os, students gain practical experience with the design and implementation of the logic of a simple processor using modern digital desi	-	-		
basic knowledg	e of digital computer construction principles, how a computer performs its operations, what is machine code, and what are its connect	ions to higher prog	ramming		
	languages.				
BIK-SI1.2	Software Engineering I	Z,ZK	. 5		
	the methods of analysis and design of large software systems, which are typically designed and implemented in teams. They get pract				
1	s 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 solving software-related problems. They get overview of object-oriented analysis, design, architecture, validation, verification, and tes		rmodelling		
BIK-SI2.3	Software Engineering 2	Z,ZK	3		
DIK-012.0	This course is presented in Czech. However, there is an English variant in the program Informatics (B1801 / 4753).	2,21	3		
BIK-SKJ	Scripting Languages	Z,ZK	4		
	This course is presented in Czech.	_, ,	-		
BIK-SP1	Team Software Project 1	KZ	4		
Students gain h	lands-on experience with the analysis, design, and prototyping of a large-scale software system. Theoretical support is provided by the	e BEI-SWI course	that runs		
	that teaches the necessary techniques and theory. Teams consisting of 4-6 students will work on a specific project. The teacher, in the				
i leader regularly d			ind tinished		
loudoi, rogulairy o	onsults with the team (at the seminars) with respect to both the formal and material aspects of the design. The resulting work will be f	urther developed a	ina miisnea		
	in the BEI-SP2 course.				
BIK-SP2.1	in the BEI-SP2 course. Team Software Project 2	KZ	4		
BIK-SP2.1 BIK-SQL.1	in the BEI-SP2 course. Team Software Project 2 Language SQL	KZ KZ	4		
BIK-SP2.1 BIK-SQL.1 Course is based or	in the BEI-SP2 course. Team Software Project 2 Language SQL n knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In page 1.00 per page 1	KZ KZ rticular stored prog	4 gram unites,		
BIK-SP2.1 BIK-SQL.1 Course is based o triggers, recursive	in the BEI-SP2 course. Team Software Project 2 Language SQL	KZ KZ rticular stored progof view of specialize	4 4 gram unites, ed database		
BIK-SP2.1 BIK-SQL.1 Course is based o triggers, recursive structures like inc	in the BEI-SP2 course. Team Software Project 2 Language SQL knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In pagueries, OLAP support, object-relational constructions. Part of the course is dedicated to practical database optimization from the point of the course is dedicated to practical database.	KZ KZ rticular stored proof view of specialized possibilities of its	4 4 gram unites, ed database s. changes		
BIK-SP2.1 BIK-SQL.1 Course is based o triggers, recursive structures like inc	in the BEI-SP2 course. Team Software Project 2 Language SQL n knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In paqueries, 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 ared. Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are based on Oracle PostgreSQL.	KZ KZ Irticular stored procof view of specialized possibilities of its to the DBMS and particle DBMS	4 4 gram unites, ed database s. changes ritally on		
BIK-SP2.1 BIK-SQL.1 Course is based o triggers, recursive structures like inc	in the BEI-SP2 course. Team Software Project 2 Language SQL n knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In paraqueries, 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 are led. Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are based on Oracle PostgreSQL. Real-time Systems	KZ KZ rticular stored procof view of specialized possibilities of its color DBMS and particle DBMS and	4 4 gram unites, ed database s. changes		
BIK-SP2.1 BIK-SQL.1 Course is based of triggers, recursive structures like ind will be discuss	in the BEI-SP2 course. Team Software Project 2 Language SQL knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In pagueries, 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 are ed. Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are based on Oracle PostgreSQL. Real-time Systems Students get basic knowledge in the area of designing SW for embedded systems with a real-time operating system (RTOS)	KZ KZ rticular stored progof view of specialized possibilities of its its cle DBMS and particular KZ	4 4 gram unites, ed database s. changes rtially on		
BIK-SP2.1 BIK-SQL.1 Course is based o triggers, recursive structures like inc	in the BEI-SP2 course. Team Software Project 2 Language SQL n knowledge obtained in BI-DBS. Students become familiar with advanced relational and non-relational features of SQL language. In paraqueries, 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 are led. Lectures will usually discuss SQL standard, but many features will be demonstrated on Oracle DBMS. Seminars are based on Oracle PostgreSQL. Real-time Systems	KZ KZ rticular stored procof view of specialized possibilities of its color DBMS and particular KZ	4 4 gram unites, ed database s. changes rtially on		

BIK-STO	Storage and Filesystems	Z,ZK	4
The student will lea	arn principles and current solutions of storage systems architecture. The module explains principles of data store, protection, and architecture.	iving, as so as stor	age scaling,
	load balancing and high availability.		
BIK-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 (custome technologies (databases, programming languages, GUI etc.).	rs) with application	is of existing
BIK-TJV	Java Technology	Z,ZK	4
	ן Java Technology s to introduce the programming language Java. The student gains practical experiences for smaller enterprise application programmi	1	1 1
	e and more layers enterprise systems. The student practically exercises all communication interfaces for each layers (JDBC, RestWel		
	course end is student able to create three layers enterprise application.		
BIK-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	with the user optimally, since the needs and characteristics of users are not taken into account during product development. Students grant the development is a state of the	ain an overview of t	the methods
DIK VEC	that bring users into the development process to ensure optimal communication with a user.	7.71/	
BIK-VES	Embedded Systems esign embedded systems and develop software for them. They get basic knowledge of the most common microcontrollers and embedo	Z,ZK	5 oir integrated
Students learn to d	peripheral circuits, programming methods, and applications. They get practical skills with development kits and tools.	ieu processors, trie	ii iiilegialeu
BIK-VWM	Searching the Web and Multimedia Databases	Z,ZK	5
	c knowledge concerning retrieval techniques on the web, where the web environment is viewed as a large distributed and heterogenou	1	
the students shall	I understand the techniques for retrieving text and hypertext documents (the web pages). Moreover, they shall be aware of similarity	retrieval methods f	ocused on
	heterogenous multimedia databases (unstructured data collections, respectively).		_
BIK-VZD	Data Mining	Z,ZK	4
	luced to the basic methods of discovering knowledge in data. In particular, they learn the basic techniques of data preprocessing, multi es of data transformation, and fundamental principles of knowledge discovery methods. Students will be aware of the relationships bet		
· · · · · · · · · · · · · · · · · · ·	es of data transformation, and fundamental principles of knowledge discovery methods. Students will be aware of the relationships bet ndamentals of assessing model quality. Data mining software is extensively used in the module. Students will be able to apply basic of		
and know the fall	problems (classification, regression, clustering).	idd minng toolo to	, , , , , , , , , , , , , , , , , , , ,
BIK-WT1	Web Technology I (Web and Multimedia)	Z,ZK	5
	presentation side of web technologies. They understand the principles of proper (X)HTML, CSS, XML, and JavaScript design. They	1 '	
elements that can	be used on the Web, such as raster graphics, video and 3D graphics. They gain a professional-level ability to design and implement t	he complete prese	entation side
	of a web application.		
BIK-WT2	Web Application Design	Z,ZK	5
	to design and implement a complete web application (both the client side and the server side). PHP is the most popular programming and is used as the primary programming language of this module. Students learn to design and implement, for instance, an e-shop, a		1
web applications, a	so on. Tools for quick and secure application development are introduced.	gallery, a silaled Co	aleliuai, aliu
BIK-ZDM	Elements of Discrete Mathematics	Z,ZK	5
	n a mathematical sound background, but also practical calculation skills in the area of combinatorics, value estimation and formula ap	1 '	
	recurrent equations, and basics of graph theory.		
BIK-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	_	
use basic proof te	echniques. They get skills to practically handle functions of one variable in solving the problems in informatics. They understand the lin		tegrals and
DIK ZWI	sums of sequences. They are able to estimate lower or upper bounds of values of real functions and to handle simple asymptotic ex	<u> </u>	1
BIK-ZWU	Introduction to Web and User Interfaces This course is presented in Czech.	Z,ZK	4
FI-FIL	Philosophy	ZK	2
	see A0B16		' -
FI-GNO	Introduction to Gnoseology	ZK	2
	uvádí do teorie poznání, systémovým pohledem nahlíží na pole kultury, na vztahy a rozdíly mezi p írodními a humánními obory, v d	1	1
•	elenkových proud 20. století jsou ukázány prom ny paradigmat a p evrat k postmodernismu, analýzou paralelism ve v d a um ní	•	·
•	osti na teorii pírodních jazyk a sémiotiky je vedena diskuze i o kognitivních procesech, v historickém pehledu 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. Ing. Ivo Janoušek CSc.	P eam tp eanasi	i a garantuje
FI-HPZ	Humanities subject from a study abroad	Z	3
	ject that has been studied abroad" is covered by the Humanities subject from a study abroad in Compulsory Humanities Module tha	I	
	The substitution is approved by the Vice-Dean for study affairs on behalf of the Dean at the request of the student.	•	
FI-HTE	History of Technology and Economics	ZK	2
The course introdu	ces the scientific disciplines of history and technology, economic and social history of the Czech lands and Czechoslovakia in comp	arison with the dev	elopment of
	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 diversit search from our "exotic" cultures (topics: kinship, religion, social exclusion, migration, globalization, , material culture, language, healt		
animopological fes	search from our exolic cultures (topics: kinship, religion, social exclusion, migration, globalization, , material culture, language, near shown. The course is an interesting alternative to other humanities, taught at FIT.	ii, iiistoi y, ueatil, e) WIII DE
FI-MPL	Managerial Psychology	ZK	2
FI-ULI	Introduction to Linguistics for Computer	ZK	2
OLI	This course is presented in Czech.		-
TV1	Physical Education	Z	0
TV2K1	Physical Education 2	Z	1
TVV	Physical education	Z	0
T\/\/0	Physical education	7	0

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2024-05-18, time 09:41.