Recomended pass through the study plan

Name of the pass: Branch Software Engineering - Passage through study

Faculty/Institute/Others: Faculty of Electrical Engineering

Department:

Pass through the study plan: Open Informatics - Software Engineering

Branch of study guranteed by the department: Welcome page

Guarantor of the study branch:

Program of study: Open Informatics Type of study: Follow-up master full-time

Note on the pass:

Coding of roles of courses and groups of courses:

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

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

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

Number of semester: 1

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BE4M33PAL	Advanced Algorithms Max Hollmann, Ond ej Drbohlav, Daniel Pr ša Daniel Pr ša Daniel Pr ša (Gar.)	Z,ZK	6	2P+2C	Z	Р
BEEZM	Safety in Electrical Engineering for a master's degree Vladimír K la, Ivana Nová, Josef ernohous, Radek Havlí ek Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	Z	Р
BE4M36DS2	Database systems 2 Yuliia Prokop Yuliia Prokop (Gar.)	Z,ZK	6	2P+2C	Z	PO
BE4M36ZKS	Software Quality Assurance Karel Frajták, Miroslav Bureš, Mat j Klíma Miroslav Bureš Miroslav Bureš (Gar.)	Z,ZK	6	2P+2C	Z	PO
2018_MOIEVOL	Elective subjects	Min. cours.	Min/Max 0/999			V

Number of semester: 2

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
ВЕ4М35КО	Combinatorial Optimization Zden k Hanzálek Zden k Hanzálek (Gar.)	Z,ZK	6	3P+2C	L	Р
BE4M01TAL	Theory of Algorithms Marie Demlová, Natalie Žukovec Marie Demlová Marie Demlová (Gar.)	Z,ZK	6	3P+2S	L	Р
BE4M36ESW	Effective Software Michal Sojka, David Šišlák David Šišlák (Gar.)	Z,ZK	6	2P+2C	L	РО
BE4M36SWA	Software Architectures Karel Frajták, Miroslav Bureš (Gar.)	Z,ZK	6	2P+2C	L	РО
2018_MOIEVOL	Elective subjects	Min. cours.	Min/Max 0/999			V

Number of semester: 3

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BE4MSVP	Software or Research Project Ji í Šebek, Petr Pošík, Jaroslav Sloup, Katarína Žmolíková, Tomáš Drábek Petr Pošík	KZ	6		Z,L	Р
BE4M36BSY	Introduction to Computer Security Sebastián García, Tomáš Pevný, Veronica Valeros, Ond ej Lukáš, Maria Rigaki, Martin epa, Lukáš Forst, Muris Sladi Tomáš Pevný Tomáš Pevný (Gar.)	Z,ZK	6	2P+2C	Z	PO

BE4M35PAG	Parallel algorithms Pemysl Š cha Pemysl Š cha Pemysl Š cha (Gar.)	Z,ZK	6	2P+2S	Z	РО
2018 MOIEVOL	Florida de Maria	Min. cours.	Min/Max			V
2016_INIOIEVOL	Elective subjects	0	0/999			V

Number of semester: 4

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BDIP25	Diploma Thesis	Z	25	22s	L	Р
2018_MOIEVOL	Elective subjects	Min. cours.	Min/Max			
		0	0/999			V

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

Kód	Name of the group of courses and codes of members of this group (for specification see here or below the list of courses)	Completion	Credits	Scope	Semester	Role
	Min. cours.	Min/Max			v	
	Elective subjects	0 0/999				

List of courses of this pass:

Code	Name of the course	Completion	Credits
BDIP25	Diploma Thesis	Z	25
Independent final	comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or I	ner branch of study	, which will
be specified b	by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the compreh	ensive final examir	nation.
BE4M01TAL	Theory of Algorithms	Z,ZK	6
The course brings	heoretical background of the theory of algorithms with the focus at first on the time and space complexity of algorithms and problem	s, secondly on the	correctness
of algorithms. Furt	her it is dealt with the theory of complexity; the classes P, NP, NP-complete, PSPACE and NPSPACE are treated and properties of th	em investigated. P	robabilistic
	algorithms are studied and the classes RP and ZZP introduced.		
BE4M33PAL	Advanced Algorithms	Z,ZK	6
Basic	graph algorithms and graph representation. Combinatorial algorithms. Application of formal languages theory in computer science -	pattern matching.	
BE4M35KO	Combinatorial Optimization	Z,ZK	6
The goal is to show	the problems and algorithms of combinatorial optimization (often called discrete optimization; there is a strong overlap with the term of	perations research	ı). Following
	near algebra, graph theory, and basics of optimization, we show optimization techniques based on graphs, integer linear programmir		
algorithms and s	tate space search methods. We focus on application of optimization in stores, ground transportation, flight transportation, logistics, pl	anning of human r	esources,
	scheduling in production lines, message routing, scheduling in parallel computers.		
BE4M35PAG	Parallel algorithms	Z,ZK	6
	lectures, we will focus on general approaches to design of parallel algorithms and their properties important for understanding the fur		
and distributed alg	porithms. Subsequently we will talk about fundamental parallel algorithms; typically, constituting cornerstones of algorithms for real-w	orld problems. The	laboratory
	exercise will be aimed at hardware platform commonly used in practice.		1
BE4M36BSY	Introduction to Computer Security	Z,ZK	6
	o teach students cybersecurity fundamentals by combining penetration testing with defense strategies. Using an innovative blend of I	•	
	in highly interactive classes. Each new concept is immediately reinforced with hands-on exercises, allowing students to apply what the	•	
	emester, the course integrates both attack and defense techniques. In realistic scenarios accessed via a cyber range, students will p		
	scanning, exploiting vulnerabilities, privilege escalation, lateral movement, exfiltration, malware analysis, network security forensics, by		
intrusion detection	n systems, honeypots, and applications of machine learning and AI in cybersecurity. Classes are in English. Teachers speak English,	Czech, Spanish, C	3reek, and
	Bosnian.		
BE4M36DS2	Database systems 2	Z,ZK	6
	duce new trends in database systems to students. We will focus primarily on the current issues of Big Data and the associated proble		•
processing of data.	We will introduce a so-called basic types of NoSQL databases and also the related issue of cloud computing, data storage and distri	buted computation	s over large
	data files.		_
BE4M36ESW	Effective Software	Z,ZK	6
	f Efficient software you will get familiar with the area of software and algorithm optimization under limited resources. The course is for		•
modern hardware	architectures - multi-core and multi-processor systems with shared memory. Students will practically implmenet and use presented to	echniques in C and	Java. Main

topics are: code optimization, effective data structures and processor cache usage, data structures in multi-threaded applications and implementation of efficient network servers.

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BE4M36SWA	Software Architectures	Z,ZK	6
In this course stu	dents become familiar with the general requirements for software (SW) architecture and related quality parameters that are monitore	d by software arch	itectures.
Individual require	ments and parameters are discussed in the context of current architectural standards and design patterns that students practically lea	arn through exerci	ses. In this
	course, besides the technology perspective on software architecture is also taken into an account the management aspect		
BE4M36ZKS	Software Quality Assurance	Z,ZK	6
BE4MSVP	Software or Research Project	KZ	6
Independent work	on a problem under the guidance of an advisor. Usually but not mandatory, the problem being solved is a subproblem of approaching	diploma thesis and	I the project
advisor is the diplo	ma thesis supervisor too. Therefore, we recommend choosing the topic of the diploma thesis at the beginning of the 3rd semester and	not underestimati	ng its timely
selection. The topic	of the project should be relevant to the major branch of the study. The software and research project course must have a clearly defin	ed output, such as	a technica
report or a compute	er program. The output is defended, evaluated and graded. Important note: - By default, it is not possible to complete more than one sub	ject of this type A	n exception
may be granted	by the guarantor of the major branch of the study. A possible reason for granting an exemption is that the work-project has a different	topic and is led by	/ another
supervisor. A typica	al example is working on a project abroad. Note: The student enrolls in the course of SVP at the department of the supervisor. If the c	ourse does not list	the course,
then at the depart	ment 13139 (variant A4M39SVP). The contact email in case of further questions: oi@fel.cvut.cz. More instructions for entering and e	laborating the proj	ect can be
	found on the website of the Department of Computer Graphics and Interaction http://dcgi.felk.cvut.cz/cs/study/predmetprojection	kt.	
BEEZM	Safety in Electrical Engineering for a master's degree	Z	0
The course provi	des for students of all programs periodic training guidelines for health and occupational safety and gives knowledge of electrical hazz	ard of given branch	of study.

Students receive indispensable qualification according to the current Directive of the Dean.

For updated information see http://bilakniha.cvut.cz/en/f3.html Generated: day 2025-11-21, time 07:44.