Recomended pass through the study plan

Name of the pass: Software Engineering and Technology

Faculty/Institute/Others: Faculty of Electrical Engineering
Department:
Pass through the study plan: Software Engineering and Technology
Branch of study guranteed by the department: Common courses
Guarantor of the study branch:
Program of study: Software Engineering and Technology
Type of study: Bachelor 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
BEZZ	**Basic Health and Occupational Safety Regulations** *Vladimír K la, Radek Havlí ek, Ivana Nová* **Radek Havlí ek** *Vladimír K la (Gar.)*	Z	0	2BP+2BC	Z	P
B0B36ZAL	**Introduction to Programming** *Ji í Vok ínek* **Ji í Vok ínek** *Ji í Vok ínek (Gar.)*	Z,ZK	6	2P+2C+8D	Z	P
B6B01ZDM	**Introduction to Discrete Mathematics** *Jaroslav Tišer* **Jaroslav Tišer** *Jaroslav Tišer (Gar.)*	Z,ZK	5	2P+2S+2D	Z	P
B6B39ZMT	**Foundations of Multimedia Production** *Roman Berka, František Rund* **Roman Berka** *Roman Berka (Gar.)*	KZ	3	4P+4L+2D	Z	P
B6B38ZPS	**Basics of Computer Systems** *Ji í Novák* **Ji í Novák** *Ji í Novák (Gar.)*	Z,ZK	6	4P+2L+2D	Z	P
B6B36ZSO	**Introduction to Project Management** *Martin Dobiáš, Jitka Pinková, Pavel Náplava* **Pavel Náplava** *Pavel Náplava (Gar.)*	KZ	5	2P+2C+5D	Z	P
B6B39ZWA	**Foundations of Web Applications** *Martin Klíma, Martin Mudra* **Martin Klíma** *Martin Klíma (Gar.)*	Z,ZK	5	2P+2C+3D	Z	P

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
BEZB	**Safety in Electrical Engineering for a Bachelor´s Degree** *Vladimír K la, Radek Havlí ek, Ivana Nová* **Radek Havlí ek** *Vladimír K la (Gar.)*	Z	0	2BP+2BC	Z,L	P
B0B36DBS	**Database Systems** *Martin imná* **Martin imná** *Martin imná (Gar.)*	Z,ZK	6	2P+2C+4D	L	P
B6B01LAG	**Linear Algebra** *Ji í Velebil, Jakub Rondoš* **Ji í Velebil** *Ji í Velebil (Gar.)*	Z,ZK	7	4P+2C+2D	L	P
B0B36PJV	**Programming in Java** *Ji í Vok ínek, Ladislav Serédi, Martin Mudroch* **Ji í Vok ínek** *Ji í Vok ínek (Gar.)*	Z,ZK	6	2P+3C+7D	L	P
B6B36SMP	**Analysis and Modeling of Software Requirements** *Martin Komárek* **Martin Komárek** *Martin Komárek (Gar.)*	Z,ZK	6	2P+3C+3D	L	P
B6B36TS1	**Software Testing** *Miroslav Bureš* **Miroslav Bureš** *Miroslav Bureš (Gar.)*	Z,ZK	5	2P+2C+2D	L	P

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

List of courses of this pass:

Code	Name of the course	Completion	Credits
B0B36DBS	Database Systems	Z,ZK	6
The course is designed as a basic database course mainly aimed at the student ability to design a relational data model and to use the SQL language for data definition as well as for data querying and to choose the appropriate degree of transaction isolation. Students will also get acquainted with the most commonly used indexing techniques, database system architecture and their management. They will verify their knowledge during the elaboration of a continuously submitted seminar task.			
B0B36PJV	Programming in Java	Z,ZK	6
The course builds on the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course also focus on the object concept of the Java language. The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working with files and using generic types will be introduced. An important topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and knowledge of Java is tested in the form of solving partial tasks and semester work, which will be submitted continuously through the source code version control system. The semester work scoring consists of points for the correctness and efficiency of the code, as well as points that take into account the quality of the source codes, their readability and reusability.			
B0B36ZAL	Introduction to Programming	Z,ZK	6
B6B01LAG	Linear Algebra	Z,ZK	7
B6B01ZDM	Introduction to Discrete Mathematics	Z,ZK	5
No advanced knowleges of mathematics are required at the beginning of this course. Using illustrative examples we build sufficient understanding of combinatorics, set and graph theory. Then we proceed to a brief formal construction of predicate calculus.			
B6B36SMP	Analysis and Modeling of Software Requirements	Z,ZK	6
This course covers the topic of requirements engineering. Their gathering, analysis, documentation, management, ... Students also will gain knowledge on using the most widely spread graphic notation - UML.			
B6B36TS1	Software Testing	Z,ZK	5
B6B36ZSO	Introduction to Project Management	KZ	5
Students are introduced to the basics of project management, which can be used not only in the field of IT projects. Students will also gain practical experience and knowledge in the area of teamwork (e.g. planning, team organization) and basics of legal and economic aspects of the project. The course also includes an introduction to presentation skills.			
B6B38ZPS	Basics of Computer Systems	Z,ZK	6
The first topic introduces students to the basic concepts of computer technology and computer networks. The following lectures are focused on digital technology, internal structure and function of the processor and its instruction set. Common and special architectures and specialized instruction sets, ways to increase processor performance and their limits will be introduced. The computer architecture description, memories and their categorization in terms of functional principles and application use will be based on this knowledge. The following lectures are focused on getting acquainted with operating systems, multitasking, inter-process communication and synchronization, resource management and virtualization. The next lecture will deal with the computer networks - first in general (OSI model) and then more specifically with an introduction to TCP / IP protocols. Further the disk (mass storage) subsystem will be described in more detail, including disk partitioning, file systems, and access rights. Finally the basics of electronics and optoelectronics, typical problems motivating students to further deepen their knowledge in this area through self-study will be introduced.			
B6B39ZMT	Foundations of Multimedia Production	KZ	3
The course familiarizes students with the basic principles of acquisition and processing of multimedia content, with a focus on image processing, video and audio, as well as the principles of graphic design and its implementation in a web environment. The course is organized within the block teaching when, within four days, students gradually pass each section of the course divided into two lectures and two workshops each day. Students will acquire the practical principles in the acquisition and processing of multimedia content while they use several different types of instruments at the application level and at the level of simple code. All students will apply the knowledge gained within the last day dedicated to composition rules within a Web project. After completing the course, students will carry out their own independent project and after its submission will be assessed.			
B6B39ZWA	Foundations of Web Applications	Z,ZK	5
The subject is focussing on the creation and maintenance of web presentations. It covers the creation of data structures (HTML), graphical design (CSS), and dynamics on the client side (Javascript). The course continues with server-side dynamics programmed in PHP 7 language. The students will learn how to handle forms and how to create a simple web application. The subject ends with an oral and written exam.			
BEZB	Safety in Electrical Engineering for a Bachelor´s Degree	Z	0
The purpose of the safety course is to give the students basic knowledge of electrical equipment and installation as to avoid danger arising from operation of it. This introductory course contains fundamentals of Safety Electrical Engineering. In this way the students receive qualification of instructed person that enables them to work on electrical equipment.			
BEZZ	Basic Health and Occupational Safety Regulations	Z	0
The guidelines were worked out based on The Training Scheme for Health and Occupational Safety designed for employees and students of the Czech Technical University in Prague, which was provided by the Rector´s Office of the CTU. Safety is considered one of the basic duties of all employees and students. The knowledge of Health and Occupational Safety regulations forms an integral and permanent part of qualification requirements. This program is obligatory.			

For updated information see http://bilakniha.cvut.cz/en/f3.html
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