Study plan

Name of study plan: Software Engineering and Technology

Faculty/Institute/Others: Faculty of Electrical Engineering

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Software Engineering and Technology

Type of study: Bachelor full-time

Required credits: 166
Elective courses credits: 14
Sum of credits in the plan: 180

Note on the plan:

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 137

The role of the block: P

Code of the group: 2021_BSITBAP Name of the group: Bachelor Project

Requirement credits in the group: In this group you have to gain 20 credits Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 20 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BBAP20	Bachelor thesis Roman meila Roman meila (Gar.)	Z	20	12S	L,Z	Р

Characteristics of the courses of this group of Study Plan: Code=2021_BSITBAP Name=Bachelor Project

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Code of the group: 2021_BSITBBE

Name of the group: Safety of the bachelor's studies

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

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BEZB	Safety in Electrical Engineering for a Bachelor's Degree Ivana Nová, Radek Havlí ek, Vladimír K la Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	Z,L	Р
BEZZ	Basic Health and Occupational Safety Regulations Ivana Nová, Radek Havlí ek, Vladimír K la Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	Z	Р

Characteristics of the courses of this group of Study Plan: Code=2021_BSITBBE Name=Safety of the bachelor's studies

BEZB		0 1							
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.

Code of the group: 2021_BSITP

Name of the group: Compulsory subjects of the programme

Requirement credits in the group: In this group you have to gain 117 credits

Requirement courses in the group: In this group you have to complete 22 courses

Credits in the group: 117

Note on the group:

Nome of the course / Nome of the group of courses	ı	1	1		
(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
Tutors, authors and guarantors (gar.)					
Database Systems Martin imná, Václav Kratochvíl Martin imná Martin imná (Gar.)	Z,ZK	6	2P+2C+4D	L	Р
Data Structures and Algorithms Karel Richta, Jan Drchal Karel Richta Karel Richta (Gar.)	Z,ZK	6	2P+3C+3D	L	Р
Information Systems Pavel Náplava, Jan Ko í Pavel Náplava Pavel Náplava (Gar.)	KZ	4	2P+2S+3D	L	Р
Cryptography and Network Security Tomáš Van k Ivan Pravda Tomáš Van k (Gar.)	Z,ZK	6	2P+2L+4D	Z	Р
Linear Algebra Ji í Velebil, Jakub Rondoš, Daria Pavlova Ji í Velebil Ji í Velebil (Gar.)	Z,ZK	7	4P+2C+2D	L	Р
Mathematics Analysis Natalie Žukovec, Karel Pospíšil Natalie Žukovec Natalie Žukovec (Gar.)	Z,ZK	5	2P+2S+2D	Z	Р
Design of Software Systems Ji í Šebek Ji í Šebek Ji í Šebek (Gar.)	Z,ZK	5	2P+2C+2D	L	Р
Object-oriented design and Modeling David Kadle ek David Kadle ek David Kadle ek (Gar.)	Z,ZK	6	2P+2C+4D	Z	Р
Computer Networks Tomáš Van k, Zbyn k Kocur, Leoš Bohá Ján Ku erák Leoš Bohá (Gar.)	Z,ZK	5	2P + 2C + 3D	Z	Р
Programming in C/C++ Radek Havlí ek, Ingrid Nagyová, Karel Richta, Petr Ryšavý Karel Richta Karel Richta (Gar.)	Z,ZK	5	2P+2C+4D	Z	Р
Programming in Java Ji í Vok ínek, Martin Mudroch, Ladislav Serédi Ji í Vok ínek Ji í Vok ínek (Gar.)	Z,ZK	6	2P+3C+7D	L	Р
Management of Software Projects Miroslav Bureš Miroslav Bureš Miroslav Bureš (Gar.)	KZ	4	2P+2C+2D	Z	Р
Analysis and Modeling of Software Requirements Martin Komárek Martin Komárek Martin Komárek (Gar.)	Z,ZK	6	2P+3C+3D	L	Р
Semestral Project Ji í Šebek, Jaroslav Sloup, Petr Pošík Jaroslav Sloup Jaroslav Sloup (Gar.)	Z	6	2s	L,Z	Р
Statistics and Probability Jakub Stan k, Kate ina Helisová Kate ina Helisová (Gar.)	Z,ZK	5	2P+2S+1D	L	Р
Software Testing Miroslav Bureš, Avetis Mkrtchian Miroslav Bureš Miroslav Bureš (Gar.)	Z,ZK	5	2P+2C+2D	L	Р
Introduction to Programming Ji í Vok ínek Ji í Vok ínek (Gar.)	Z,ZK	6	2P+2C+8D	Z	Р
Introduction to Discrete Mathematics Jaroslav Tišer Jaroslav Tišer (Gar.)	Z,ZK	5	2P+2S+2D	Z	Р
Foundations of Multimedia Production Roman Berka, František Rund Roman Berka Roman Berka (Gar.)	KZ	3	4P+4L+2D	Z	Р
Basics of Computer Systems Jií Novák Jií Novák Jií Novák (Gar.)	Z,ZK	6	4P+2L+2D	Z	Р
Introduction to Project Management Pavel Náplava, Martin Dobiáš, Jitka Pinková Pavel Náplava Pavel Náplava (Gar.)	KZ	5	2P+2C+5D	Z	Р
Foundations of Web Applications Martin Klíma, Martin Mudra Martin Klíma Martin Klíma (Gar.)	Z,ZK	5	2P+2C+3D	Z	Р
	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.) Database Systems Martin immå, Väclav Kratochvil Martin immå Martin immå (Gar.) Data Structures and Algorithms Karel Richta, Jan Drohal Karel Richta Karel Richta (Gar.) Information Systems Pavel Näplava, Jan Ko i Pavel Náplava Pavel Náplava (Gar.) Cryptography and Network Security Tomáš Van k Ivan Pravda Tomáš Van k (Gar.) Linear Algebra Ji i Vlelbil, Jakub Rondoš, Daria Pavlova Ji i Velebil Ji i Velebil (Gar.) Mathematics Analysis Natalie Žukovec, Karel Pospišil Natalie Žukovec Natalie Žukovec (Gar.) Design of Software Systems Ji i Šebek Ji i Šebek (Gar.) Object-oriented design and Modeling David Kadle ek David Kadle ek (Gar.) Computer Networks Tomáš Van k, Zbyn k Kocur, Leoš Bohá Ján Ku erák Leoš Bohá (Gar.) Programming in C/C++ Radek Havli ek, Ingrid Nagyová, Karel Richta, Petr Ryšavý Karel Richta (Karel Richta (Gar.) Programming in Java Ji Vok Inek, Martin Mudroch, Ladislav Serédi Ji í Vok Ínek Ji í Vok Ínek (Gar.) Management of Software Projects Miroslav Bureš Miroslav Bureš Miroslav Bureš (Gar.) Analysis and Modeling of Software Requirements Martin Komárek Martin Komárek Martin Komárek (Gar.) Semestral Project Ji í Šebek, Jaroslav Sloup, Petr Pošík Jaroslav Sloup Jaroslav Sloup (Gar.) Statistics and Probability Jakub Stan k, Kate ina Helisová Kate ina Helisová (Gar.) Introduction to Programming Ji i Vok Inek Ji í Vok inek Ji í Vok inek (Gar.) Introduction to Discrete Mathematics Jaroslav Tišer Jaroslav Tišer (Gar.) Foundations of Multimedia Production Roman Berka, František Rund Roman Berka Roman Berka (Gar.) Introduction to Project Management Pavel Náplava, Martin Dobiáš, Jitka Pinková Pavel Náplava Pavel Náplava (Gar.) Foundations of Web Applications	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.) Database Systems Martin immá, Väclav Kratochvíl Martin immá Martin imná (Gar.) Data Structures and Algorithms Karel Richta, Jan Drchal Marel Richta Karel Richta (Gar.) Information Systems Pavel Náplava, Jan Ko í Pavel Náplava Pavel Náplava (Gar.) Cryptography and Network Security Tomás Var k Ivan Pravda Tomáš Van k (Gar.) Linear Algebra Ji í Velebil, Jakub Rondoš, Daria Pavlova Ji í Velebil Ji í Velebil (Gar.) Mathematics Analysis Natalie Žukovec, Karel Pospíši Natalie Žukovec Natalie Žukovec (Gar.) Design of Software Systems Ji í Sebek Ji í Šebek (Gar.) Object-oriented design and Modeling David Kadle ek David Kadle ek David Kadle ek (Gar.) Programming in C/C++ Radek Havll ek, Ingrid Nagyová, Karel Richta, Petr Ryšavý Karel Richta Karel Richta (Gar.) Programming in Java Ji í Vok ínek, Martin Mudroch, Ladislav Serédi Ji í Vok ínek Ji í Vok ínek Gar.) Programming of Software Projects Miroslav Bureš Miroslav Bureš (Gar.) Analysis and Modeling of Software Requirements Martin Komárek Martin Komárek Martin Komárek (Gar.) Semestral Project Ji í Šebek, Jaroslav Sloup, Petr Pošík Jaroslav Sloup Jaroslav Sloup (Gar.) Statistics and Probability Jakub Stan k, Kate ina Helisová Kate ina Helisová (Gar.) Software Testing Miroslav Bureš, Aveits Mirchian Miroslav Bureš Miroslav Bureš (Gar.) Introduction to Programming Ji í Vok ínek Ji í Novák Ji í Novák (Gar.) RZKK Basics of Computer Systems Ji í Novák Ji í Novák Ji í Novák (Gar.) RZ KK RZ RZK Basics of Computer Systems Ji í Novák Ji í Novák (Gar.) Introduction to Programming Ji í Vok ínek Ji í Novák Ji í Novák (Gar.) RZ KK RZ RA RADISIONAL RADISIONAL PRADISIONAL PRADISIONAL PRAVE Náplava (RZ RZK Introduction to Programming Ji í Vok ínek Ji í Novák (Bar.) 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Programming in C/C++ Radek Havil ek, Ingrid Nagyová, Karel Richta, Petr Ryšavý Karel Richta Karel Richta (Gar.) Programming in Java Ji i Vek Inek, Martin Mudroch, Ladislav Serédi Ji i Vok Inek Ji i Vok Inek (Gar.) Management of Software Projects Miroslav Buraš Miroslav Bureš Miroslav Bureš (Gar.) Semestral Project Ji i Sebek, Jaroslav Sloup, Petr Pošik Jaroslav Sloup Jaroslav Sloup (Gar.) Semestral Project Ji i Sebek, Jaroslav Sloup, Petr Pošik Jaroslav Sloup Jaroslav Sloup (Gar.) Semestral Project Ji i Sebek, Jaroslav Sloup, Petr Pošik Jaroslav Bureš Miroslav Bureš (Gar.) Semestral Project Ji i Sebek, Jaroslav Sloup, Petr Pošik Jaroslav Sloup Jaroslav Sloup (Gar.) Semestral Project Ji i Vek inek Ji i Vok inek (Gar.) Semestral Project Ji i Sebek, Jaroslav Sloup, Petr Pošik Jaroslav Bureš Miroslav Bureš (Gar.) Semestral Project Ji i Vek inek Ji i Vok inek (Gar.) Semestral Project Ji i Vek inek Ji i Vok inek (Gar.) Semestral Project Ji i Vek inek Ji i Vok inek (Gar.) 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Design of Software Systems Ji í Sebek Ji í Sebek (Gar.) Computer Networks Tomáš Van k, Zbyn k Kocur, Leoš Bohá Ján Ku erák Leoš Bohá (Gar.) Computer Networks Tomáš Van k, Zbyn k Kocur, Leoš Bohá Ján Ku erák Leoš Bohá (Gar.) Programming in C/C++ Radek Hawli ek, Ingrid Nagyová, Karel Richta, Petr Ryšavý Karel Richta Karel Richta (Gar.) Management of Software Projects Miroslav Bureš Miroslav Bureš Miroslav Bureš (Gar.) Analysis and Modeling of Software Requirements Martin Komárek Kate ina Helisová Kate ina Helisová (Gar.) Semestral Project Ji í Sebek, Janoslav Sloup, Petr Pošík Janoslav Sloup Janoslav Sloup (Gar.) Statistics and Probability Ji í Vok ínek, Jí í Novák (Gar.) Introduc	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.) Database Systems Martin imná, Václav Kratochvil Martin imná Martin imná (Gar.) Database Systems Martin imná, Václav Kratochvil Martin imná Martin imná (Gar.) Data Structures and Algorithms Z,ZK 6

Characteristics of the courses of this group of Study Plan: Code=2021_BSITP Name=Compulsory subjects of the programme

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 m	anagement. They will verify their knowledge during the elaboration of a continuously submitted seminar task.						

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B6B36DSA	Data St	tructures	and Algo	orithms		Z,ZK	6
B6B16INS	Informa	tion Sys	tems			K7	4

The goal of this course is to familiarise students with the information systems topic and information systems implementation principles. During the course, students are introduced to "on the market" existing types of systems and their usage in specific industry segments. Students are familiarised with the CRM, ERP, MRP and other types of information systems. The fundamental part of the course is the introduction to key ideas of an information system selection, evaluation of information system benefits, ways of information systems implementation and information system implementation based on the project management principles. The emphasis is on the initial customer analysis, customer insight and ability to decide whether it is better to implement any existing information system or to develop a new one from scratch. These factors determine the information system implementation success. At the end of the course information systems security, operation, support, maintenance, legislation impacts, and government information systems topics are discussed.

B0M32KSB	Cryptography and Network Security	Z,ZK	6
	ity course provides a complete source of information on the field of security of information systems and information technolog		mation in today
society is created, trar	sferred, stored in electronic form so information security is very important part of it. Technical background for information security	curity is provided by o	cryptology.
B6B01LAG	Linear Algebra	Z,ZK	7
B6B01MAA	Mathematics Analysis	Z,ZK	5
	duction to differential and integral calculus. It covers basic properties of functions, limits of functions, derivative and its applic	1 '	_
	integral with its applications, sequences and series.	3, 3,	. , ,
B6B36NSS	Design of Software Systems	Z,ZK	5
B6B36OMO	Object-oriented design and Modeling	Z,ZK	6
B6B32PSI	Computer Networks	Z,ZK	5
	·		
B6B36PCC	Programming in C/C++	Z,ZK	5
B0B36PJV	Programming in Java	Z,ZK	6
	he basics of algorithms and programming from the first semester and introduces students to the Java environment. The cour		-
1	The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working	-	
	mportant topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and known and their implementation.	-	
I	and semester work, which will be submitted continuously through the source code version control system. The semester wo	ork scoring consists o	of points for the
	ency of the code, as well as points that take into account the quality of the source codes, their readability and reusability.	147	
B6B36PM2	Management of Software Projects	KZ	4
B6B36SMP	Analysis and Modeling of Software Requirements	Z,ZK	6
	topic of requirements engineering. Their gathering, analysis, documentation, management, Students also will gain knowled	lge on using the most	t widely spread
graphic notation - UMI	·		
B6BPROJ6	Semestral Project	Z	6
Individual or team wor	k in form of a project. Student selects the subject of their project from the list of topics relevant to the studied specialization a	nd provided by the sp	pecific
department/departmer	nts. The project's subject can be closely related to the future Bachelor thesis. Further instructions for the selection and resolu	tion of the projects ca	an be found on
the web pages of the	selected department. Within this course the project is also defended.		
B6B01PRA			
DODO II IXA	Statistics and Probability	Z,ZK	5
	Statistics and Probability troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application	1 ' 1	_
The students will be in the basic parts of prob	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next part is focused on classical probability, including conditional probability.	ons in practice. The co	ourse covers eory of random
The students will be in the basic parts of prob	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application	ons in practice. The co	ourse covers eory of random
The students will be in the basic parts of prob variables and their dist	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next part is focused on classical probability, including conditional probability.	ons in practice. The copart deals with the the variables, their independent	ourse covers eory of random
The students will be in the basic parts of prob variables and their dist	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics of random violations, examples of the most important types of discrete and continuous distributions, numerical characteristics of random violations.	ons in practice. The copart deals with the the variables, their independent	ourse covers eory of random
The students will be in the basic parts of prob variables and their dist and transformations. F	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next pributions, examples of the most important types of discrete and continuous distributions, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing Software Testing	ons in practice. The copart deals with the the variables, their independent of the properties of the p	ourse covers eory of random endence, sums
The students will be in the basic parts of prob variables and their dist and transformations. F B6B36TS1 B0B36ZAL	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic statistical methods for estimations, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing Software Testing Introduction to Programming	ons in practice. The copart deals with the the variables, their independ on hypotheses. Z,ZK Z,ZK	ourse covers eory of random endence, sums 5 6
The students will be in the basic parts of prob variables and their dist and transformations. F B6B36TS1 B0B36ZAL B6B01ZDM	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic statistical methods for estimations, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing software Testing Introduction to Programming Introduction to Discrete Mathematics	ons in practice. The copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart of the copar	ourse covers eory of random endence, sums 5 6 5
The students will be in the basic parts of prob variables and their dist and transformations. FB6B36TS1 B0B36ZAL B6B01ZDM No advanced knowleg	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic statistical methods for estimations, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing Software Testing Introduction to Programming	ons in practice. The copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart of the copar	ourse covers eory of random endence, sums 5 6 5
The students will be in the basic parts of prob variables and their dist and transformations. FB6B36TS1 B0B36ZAL B6B01ZDM No advanced knowleg theory. Then we proce	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic knowledge of the most important types of discrete and continuous distributions, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing software Testing introduction to Programming Introduction to Programming Introduction to Discrete Mathematics are required at the beginning of this course. Using illustrative examples we build sufficient understanding ed to a brief formal construction of predicate calculus.	ons in practice. The copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart of the copar	ourse covers eory of random endence, sums 5 6 5 t and graph
The students will be in the basic parts of prob variables and their dist and transformations. FB6B36TS1 B0B36ZAL B6B01ZDM No advanced knowleg theory. Then we proce B6B39ZMT	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic knowledge of the most important types of discrete and continuous distributions, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing software Testing Introduction to Programming Introduction to Programming Introduction to Discrete Mathematics es of mathematics are required at the beginning of this course. Using illustrative examples we build sufficient understanding ed to a brief formal construction of predicate calculus. Foundations of Multimedia Production	ons in practice. The copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart deals with the the variables, their independent of their independen	ourse covers eory of random endence, sums 5 6 5 t and graph
The students will be in the basic parts of prob variables and their dist and transformations. FB6B36TS1 B0B36ZAL B6B01ZDM No advanced knowleg theory. Then we proce B6B39ZMT The course familiarize	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic knowledge of the most important types of discrete and continuous distributions, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing software Testing Introduction to Programming Introduction to Discrete Mathematics are required at the beginning of this course. Using illustrative examples we build sufficient understanding ed to a brief formal construction of predicate calculus. Foundations of Multimedia Production students with the basic principles of acquisition and processing of multimedia content, with a focus on image processing, very support to the production of the production of multimedia content, with a focus on image processing, very support to the production of the production of multimedia content, with a focus on image processing, very support to the production of the production o	ons in practice. The copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the copart deals with the the variables, their independent of the variables. Z,ZK Z,ZK Z,ZK of combinatorics, set KZ ideo and audio, as w	ourse covers eory of random endence, sums 5 6 5 t and graph 3 rell as the
The students will be in the basic parts of prob variables and their dist and transformations. FB6B36TS1 B0B36ZAL B6B01ZDM No advanced knowleg theory. Then we proce B6B39ZMT The course familiarize principles of graphic d	troduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their application ability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next probabilistic knowledge of the most important types of discrete and continuous distributions, numerical characteristics of random probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and testing software Testing Introduction to Programming Introduction to Discrete Mathematics are required at the beginning of this course. Using illustrative examples we build sufficient understanding ed to a brief formal construction of predicate calculus. Foundations of Multimedia Production setudents with the basic principles of acquisition and processing of multimedia content, with a focus on image processing, vesign and its implementation in a web environment. The course is organized within the block teaching when, within four days	ons in practice. The copart deals with the the variables, their independent of the provided by their independent of the provided by their independent of the	ourse covers eory of random endence, sums 5 6 5 t and graph 3 rell as the pass each
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application. The subject ends with an oral and written exam.

Code of the group: 2021_BSITECTSZAJ

Name of the group: Exam in English

Requirement credits in the group:

Requirement courses in the group: In this group you have to complete 2 courses

Credits in the group: 0 Note on the group:

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

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
B0B04B1K	English language B1 - classified assessment Markéta Havlí ková, Pavla Péterová, Erik Peter Stadnik, Michael Ynsua, Dana Saláková, Petra Juna Jennings Petra Juna Jennings (Gar.)	KZ	0	0C	Z,L	Р
B0B04B2Z	English language B2 - exam Markéta Havlí ková, Michael Ynsua, Dana Saláková, Petra Juna Jennings Petra Juna Jennings Petra Juna Jennings (Gar.)	Z,ZK	0	0C	Z,L	Р

Characteristics of the courses of this group of Study Plan: Code=2021_BSITECTSZAJ Name=Exam in English

B0B04B1K	B0B04B1K English language B1 - classified assessment					
verifying of the student	s skills of B1 level	•				
B0B04B2Z	English language B2 - exam	Z,ZK	0			

I) The B2 English Exam is a compulsory subject for all Faculty of Electrical Engineering students at the Czech Technical University. According to the Study and Examination Rules and Regulations for Students at CTU (Part III, Article 4), a compulsory subject is one whose completion is a necessary condition in order to successfully complete the study programme. In addition, this requires the passing of an examination evaluated on the scale A, B, C, D, or E (SERR Part III, Article 6). II) According to the Common European Framework of Reference for Languages (CEFR), an international standard for describing language ability, the definition of an English language learner who has achieved the B2 (Upper-Intermediate) level is one who can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options. III) Students who have successfully passed an approved international exam within the past five years may present their certificate to the Department of Languages, Faculty of Electrical Engineering. Upon approval, students are then exempt from both the Written Test and the Oral Part. For a list of approved international exams go the department website: http://jazyky.fel.cvut.cz/

Name of the block: Compulsory courses in the specialization

Minimal number of credits of the block: 20

The role of the block: PS

Code of the group: 2021_BSITPS4

Name of the group: Compulsory subjects - specialization

Requirement credits in the group: In this group you have to gain 20 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 20

Note on the group:

Specialization

Z.ZK

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
B2M32DSVA	Distributed Computing Peter Macejko Peter Macejko (Gar.)	Z,ZK	6	2P + 2C	Z	PS
B0B32KTI	Communication Technology for IoT Lukáš Vojt ch, Ji í Vodrážka Lukáš Vojt ch Lukáš Vojt ch (Gar.)	Z,ZK	5	2P + 2L + 2D	Z	PS
B0B37NSI	Design of IoT systems Stanislav Vítek Stanislav Vítek Stanislav Vítek (Gar.)	Z,ZK	5	2P + 2L + 2D	L	PS
B6B32UOP	Unix Operating Systems Pavel Troller Ján Ku erák Pavel Troller (Gar.)	KZ	4	2P + 2C + 2D	Z	PS

Characteristics of the courses of this group of Study Plan: Code=2021_BSITPS4 Name=Compulsory subjects - specialization

BZIVI3ZDSVA	Distributed Computing	Z,ZK	b
The course is focused of	on technologies that support distributed computing: on mechanisms ensuring reliable, efficient and secure connection of appli	cation processes	, programming

The course is focused on technologies that support distributed computing: on mechanisms ensuring reliable, efficient and secure connection of application processes, programmin interfaces of communication channels and up-to-date middleware technologies. A significant part of lectures is dedicated to distributed algorithms that assure causality, exclusive access, deadlock detection/avoidance, fault-tolerance, mobile computing, and security.

B0B32KTI	Communication Technology for IoT
DUDJZNII	Communication rechnology for to t

The essence of IoT technologies is the transfer of information, communication of things with each other and especially the possibility of developing new types of services. The course in a simplified form presents the basics of digital communication, especially wireless, with a focus on specific communication protocols in IoT, not only in industrial applications. IoT is understood as a complex system with the possibility of using existing components, development and presentation environments for data processing and visualization, including the concept of IoT as a service. Part of the exercise is acquaintance with specific technologies in the laboratory and project solutions individually and in a team.

B0B37NSI	Design of IoT systems	Z,ZK	5
B6B32UOP	Unix Operating Systems	KZ	4

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 9

The role of the block: PV

Code of the group: 2021_BSITPVS4

Name of the group: Compulsory elective subjects - specialization

Requirement credits in the group: In this group you have to gain at least 9 credits (at most 37)

Requirement courses in the group: In this group you have to complete at least 2 courses (at most 7)

Credits in the group: 9

Note on the group: Specialization

Note on the given	oup.	nanzanon				
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
B3B38LPE	Laboratories of Industrial Electronics and Sensors Jan Fischer, Tomáš Drábek, Michal Janošek, Vojt ch Petrucha Vojt ch Petrucha Vojt ch Petrucha (Gar.)	KZ	4	0P+4L	L	PV
B0B35LSP	Logic systems and processors Richard Šusta, Martin Hlinovský Martin Hlinovský Zden k Hurák (Gar.)	Z,ZK	6	2P+2L	L	PV
B6B34MK2	Microcontrollers Vladimír Janí ek, Tomáš Teplý Tomáš Teplý Vladimír Janí ek (Gar.)	Z,ZK	5	2P+2C	Z	PV
B4B38NVS	Embedded Systems Design Jan Fischer, Vojt ch Petrucha Jan Fischer Jan Fischer (Gar.)	Z,ZK	6	2P+2L	Z	PV
B6B32ST2	Advanced Networking Technologies Leoš Bohá Leoš Bohá Leoš Bohá (Gar.)	Z,ZK	5	2P + 2C + 4D	Z	PV
B6B39PDA	Principles of mobile applications Ivo Malý	Z,ZK	6	2P+2C	L	PV
B6B39ZAN	Basic Android development Ivo Malý Ivo Malý (Gar.)	KZ	5	2P+2C+4D	L	PV

Characteristics of the courses of this group of Study Plan: Code=2021_BSITPVS4 Name=Compulsory elective subjects - specialization

B3B38LPE	Laboratories of Industrial Electronics and Sensors	KΖ	4
The objective of the "La	boratories" is to introduce students in a playful and interactive way with basic blocks of an industrial sensor system - from the	sensor itself, thre	ough signal
processing circuits, ana	og to digital signal conversion, software processing by a microcontroller up to the sending of the results to the superior system	or database and tl	neir presentation
to the user within the co	ncept "Internet of Things".		

B0B35LSP Logic systems and processors

The course introduces computing resources' basic hardware structures, design, and architecture. It provides an overview of the possibilities of performing data operations at the hardware level and designing embedded processor systems with peripherals on modern FPGA programmable logic circuits, which are increasingly widely used today. Students will learn their description in VHDL, from logic to more complex sequential circuits to practical finite state machine (FSM) designs. They will also master the correct design procedure using circuit simulation. Practical problems are solved using development boards that hundreds of leading universities worldwide also use. The course ends with RISC-V processor structure, cache, and pipeline processing. [last updated January 2024]

Z,ZK

B6B34MK2	Microcontrollers	Z,ZK	5
B4B38NVS	Embedded Systems Design	Z,ZK	6
The course deals with design of embedded systems using ARM based microcontrollers.			
B6B32ST2	Advanced Networking Technologies	Z,ZK	5
B6B39PDA	Principles of mobile applications	Z,ZK	6
Student who successfully passed the course get overview about properties and about limits of single mobile technologies. The course is focused on specific problems related to			

Student who successfully passed the course get overview about properties and about limits of single mobile technologies. The course is focused on specific problems related to limitations and new capabilities of mobile devices. Attention is paid to maximal utilization of environment characteristics in which the mobile application is used. Course is not focused on introduction of basic programming techniques for mobile application development - it is expected that students already have this skills or will be gained by means of self-study.

B6B39ZAN Basic Android development KZ 5

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

The role of the block: V

Code of the group: 2021_BSITVOL Name of the group: Elective subjects Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0

Note on the group: #~Nabídku volitelných předmětů uspořádaných podle kateder najdete na webových stránkách

http://www.fel.cvut.cz/cz/education/volitelne-predmety.html\\

List of courses of this pass:

Code	Name of the course	Completion	Credits
B0B04B1K	English language B1 - classified assessment verifying of the student's skills of B1 level	KZ	0
Regulations for Stu	English language B2 - exam xam is a compulsory subject for all Faculty of Electrical Engineering students at the Czech Technical University. According to the Students at CTU (Part III, Article 4), a compulsory subject is one whose completion is a necessary condition in order to successfully conditions.	plete the study pro	ogramme. Ir
for Languages (CE	es the passing of an examination evaluated on the scale A, B, C, D, or E (SERR Part III, Article 6). II) According to the Common Euro FR), an international standard for describing language ability, the definition of an English language learner who has achieved the B2 stand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisa:	2 (Upper-Intermedi	ate) level is
of fluency and spon	taneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed to repoint on a topical issue giving the advantages and disadvantages of various options. III) Students who have successfully passed an	ext on a wide range	e of subjects
	rears may present their certificate to the Department of Languages, Faculty of Electrical Engineering. Upon approval, students are the Test and the Oral Part. For a list of approved international exams go the department website: http://jazyky.fel.cvut.cz/		1
B0B32KTI The essence of IoT	Communication Technology for IoT technologies is the transfer of information, communication of things with each other and especially the possibility of developing new	Z,ZK types of services.	The course
understood as a c	presents the basics of digital communication, especially wireless, with a focus on specific communication protocols in IoT, not only i omplex system with the possibility of using existing components, development and presentation environments for data processing at	nd visualization, in	
B0B35LSP	ot of IoT as a service. Part of the exercise is acquaintance with specific technologies in the laboratory and project solutions individual	Z,ZK	6
The course introduction level and designing	Logic systems and processors es computing resources' basic hardware structures, design, and architecture. It provides an overview of the possibilities of performing of gembedded processor systems with peripherals on modern FPGA programmable logic circuits, which are increasingly widely used to	lata operations at the coday. Students will	he hardware I learn their
=	DL, from logic to more complex sequential circuits to practical finite state machine (FSM) designs. They will also master the correct d I problems are solved using development boards that hundreds of leading universities worldwide also use. The course ends with RISC and pipeline processing. [last updated January 2024]		-
B0B36DBS	Database Systems ned as a basic database course mainly aimed at the student ability to design a relational data model and to use the SQL language f	Z,ZK	6 as well as for
_	to choose the appropriate degree of transaction isolation. Students will also get acquainted with the most commonly used indexing architecture and their management. They will verify their knowledge during the elaboration of a continuously submitted seminal	techniques, databa	
B0B36PJV	Programming in Java	Z,ZK	6
The course builds of	n the basics of algorithms and programming from the first semester and introduces students to the Java environment. The course al	so focus on the ob	ject concept
will be introduced. A	e. The topics of the course includes exceptions, event handling, and building a graphical interface. Basic library methods, working wit on important topic is models of multithreaded applications and their implementation. Practical exercises of practical skills and knowled sks and semester work, which will be submitted continuously through the source code version control system. The semester work sc	ge of Java is tested oring consists of p	d in the form
D0D00741	correctness and efficiency of the code, as well as points that take into account the quality of the source codes, their readability and		
B0B36ZAL	Introduction to Programming	Z,ZK	6
B0B37NSI B0M32KSB	Design of IoT systems	Z,ZK Z,ZK	5 6
	Cryptography and Network Security curity course provides a complete source of information on the field of security of information systems and information technologies. T		-
	l, transferred, stored in electronic form so information security is very important part of it. Technical background for information secur		
B2M32DSVA	Distributed Computing	Z,ZK	6
	sed on technologies that support distributed computing: on mechanisms ensuring reliable, efficient and secure connection of applica munication channels and up-to-date middleware technologies. A significant part of lectures is dedicated to distributed algorithms that access, deadlock detection/avoidance, fault-tolerance, mobile computing, and security.		
B3B38LPE	Laboratories of Industrial Electronics and Sensors the "Laboratories" is to introduce students in a playful and interactive way with basic blocks of an industrial sensor system - from the	KZ sensor itself, throu	4
•	analog to digital signal conversion, software processing by a microcontroller up to the sending of the results to the superior system or c to the user within the concept "Internet of Things".		
B4B38NVS	Embedded Systems Design The course deals with design of embedded systems using ARM based microcontrollers.	Z,ZK	6
B6B01LAG	Linear Algebra	Z,ZK	7
B6B01MAA	Mathematics Analysis	Z,ZK	5
This course is an in	troduction to differential and integral calculus. It covers basic properties of functions, limits of functions, derivative and its application and definite/indefinite integral with its applications, sequences and series.	s (graphing, Taylor	polynomial)
B6B01PRA	Statistics and Probability	Z,ZK	5
	e introduced to the theory of probability and mathematical statistics, namely to the basic computing methods and their applications i obability and mathematical statistics. The first part is focused on classical probability, including conditional probability. The next part c	-	
and tran	distributions, examples of the most important types of discrete and continuous distributions, numerical characteristics of random varial sformations. Probabilistic knowledge is then used in the description of statistical methods for estimating distribution parameters and	testing hypotheses	S.
B6B01ZDM No advanced kno	Introduction to Discrete Mathematics wleges of mathematics are required at the beginning of this course. Using illustrative examples we build sufficient understanding of the provided the provided transfer of provided to a brief formal construction of provided to a legislate.	Z,ZK combinatorics, set	5 and graph
B6B16INS	theory. Then we proceed to a brief formal construction of predicate calculus. Information Systems	KZ	4
_	urse is to familiarise students with the information systems topic and information systems implementation principles. During the cour		
	isting types of systems and their usage in specific industry segments. Students are familiarised with the CRM, ERP, MRP and other al part of the course is the introduction to key ideas of an information system selection, evaluation of information system benefits, wa		·=

implementation and information system implementation based on the project management principles. The emphasis is on the initial customer analysis, customer insight and ability to decide whether it is better to implement any existing information system or to develop a new one from scratch. These factors determine the information system implementation success. At the end of the course information systems security, operation, support, maintenance, legislation impacts, and government information systems topics are discussed. B6B32PSI Computer Networks Z.ZK B6B32ST2 Advanced Networking Technologies Z.ZK 5 B6B32UOP ΚZ Unix Operating Systems 4 B6B34MK2 Microcontrollers Z,ZK 5 B6B36DSA Data Structures and Algorithms Z,ZK 6 B6B36NSS Design of Software Systems Z,ZK 5 **B6B36OMO** Object-oriented design and Modeling 6 Z,ZK B6B36PCC Z,ZK Programming in C/C++ 5 B6B36PM2 Management of Software Projects ΚZ 4 Z.ZK B6B36SMP Analysis and Modeling of Software Requirements 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 ΚZ 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 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. Principles of mobile applications B6B39PDA Student who successfully passed the course get overview about properties and about limits of single mobile technologies. The course is focused on specific problems related to limitations and new capabilities of mobile devices. Attention is paid to maximal utilization of environment characteristics in which the mobile application is used. Course is not focused on introduction of basic programming techniques for mobile application development - it is expected that students already have this skills or will be gained by means of self-study. B6B39ZAN Basic Android development B6B39ZMT Foundations of Multimedia Production K7 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. Foundations of Web Applications B6B39ZWA 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. B6BPRO.I6 Semestral Project Individual or team work in form of a project. Student selects the subject of their project from the list of topics relevant to the studied specialization and provided by the specific department/departments. The project's subject can be closely related to the future Bachelor thesis. Further instructions for the selection and resolution of the projects can be found on the web pages of the selected department. Within this course the project is also defended. BBAP20 Bachelor thesis BEZB Safety in Electrical Engineering for a Bachelor's Degree Ζ 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.

For updated information see http://bilakniha.cvut.cz/en/f3.html Generated: day 2025-07-22, time 04:31.

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.