Study plan

Name of study plan: Electronics and Communications - Technology of the Internet of Things

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: Electronics and Communications

Type of study: Follow-up master full-time

Required credits: 109
Elective courses credits: 11
Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 79

The role of the block: P

Code of the group: 2018_MEKDIP Name of the group: Diploma Thesis

Requirement credits in the group: In this group you have to gain 25 credits Requirement courses in the group: In this group you have to complete 1 course

Credits in the group: 25 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
BDIP25	Diploma Thesis	Z	25	22s	L	Р

Characteristics of the courses of this group of Study Plan: Code=2018_MEKDIP Name=Diploma Thesis

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 her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.

Code of the group: 2018_MEKP4

Name of the group: Compulsory subjects of the programme

Requirement credits in the group: In this group you have to gain 54 credits

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 54

Note on the group:

Specializace technologie internetu věcí

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
B2M32BTSA	Wireless Technologies Zden k Be vá, Lukáš Vojt ch, Zbyn k Kocur, Pavel Mach Ján Ku erák Zden k Be vá (Gar.)	Z,ZK	6	2P + 2L	L	Р
B2M37MAM	Microprocessors Petr Skalický, Stanislav Vítek Stanislav Vítek (Gar.)	Z,ZK	6	2P+2L	Z	Р
B2M34MST	Microsystems Michal Ko í, Miroslav Husák, Adam Bou a, Alexandr Laposa Miroslav Husák Miroslav Husák (Gar.)	Z,ZK	6	2P+2L	L	Р
B2M32MKSA	Mobile Networks Zden k Be vá, Pavel Mach, Robert Bešák Pavel Mach Zden k Be vá (Gar.)	Z,ZK	6	2P + 2L	Z	Р
B2M31DSP	Advanced DSP methods Pavel Sovka, Petr Pollák Pavel Sovka Pavel Sovka (Gar.)	Z,ZK	6	2P+2C	Z,L	Р

B2M32PST	Advanced Networking Technologies Leoš Bohá Zbyn k Kocur Leoš Bohá (Gar.)	Z,ZK	6	2P + 2C + 4D	Z	Р
B2MPROJ6	Project Ji í Jakovenko, Pavel Máša, Ivan Pravda, František Rund, Jan Šístek, Lubor Jirásek, Tomáš Zeman, Ladislav Oppl František Rund František Rund (Gar.)	Z	6	0p+6s	Z,L	Р
B2M34SIS	Integrated System Structures Ji í Jakovenko, Vladimír Janí ek Vladimír Janí ek Ji í Jakovenko (Gar.)	Z,ZK	6	2P+2C	Z	Р
B2M17SBS	Wave Propagation for Wireless Links Pavel Pecha Pavel Pecha (Gar.)	Z,ZK	6	2P+2C	L	Р

Characteristics of the courses of this group of Study Plan: Code=2018_MEKP4 Name=Compulsory subjects of the programme

B2M32BTSA Wireless Technologies

The lectures give overview of fundamental principles of wireless networks in various areas of their application. Students will understand architecture, principles and protocols used in different wireless technologies and learn how these technologies can be exploited in real world applications. The goal is to teach students how to solve problems related to deployment of wireless networks, their operation or development of wireless networks components.

B2M37MAM Microprocessors

The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design.

B2M34MST Microsystems Z,ZK

The course deals with system integration applied in the design of digital and analog systems. It demonstrates the new possibilities of implementation and application of integrated microelectronic devices based on various physical and biochemical principles. It presents primarily MEMS technology that increases reliability with all its attributes. The course presents the modern action elements and microactuators, whose operation is based on fundamental physical and biochemical principles, including basic applications in micromanipulation, microrobots, microdrives, microsurgery, multimedia, medical, industrial control, automotive, etc. In the course are presented the principles of touch screens, microgenerators of electrical energy. There are mentioned basic elements of the use of nanotechnology and nanoelectronic structures and basic microsystem technologies.

B2M32MKSA Mobile Networks 7.7K

The lectures introduce principles and functionalities of mobile networks with special focus on currently deployed technologies and future mobile networks. Furthermore, architecture and fundamental principles of GSM, UMTS, LTE/LTE-A, and 5G will be explained. Then, selected key technologies for future mobile networks (6G) will be explained.

B2M31DSP Advanced DSP methods

The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital signals analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familiar with methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of signal analvses

B2M32PST Advanced Networking Technologies

Subject Advanced Network Technologies expands students' knowledge of modern network technologies. The course is practically oriented and focused on explaining the function of advanced network protocols as used in modern data networks of today and tomorrow. Students will gain practical experience with the issues like Internet routing, software-defined networks, multicast routing, IPv6, and MPLS networks. Part of the course is also devoted to a detailed explanation of transport protocols TCP/UDP and a manner in which software applications can access transportation services of TCP/IP data networks.

B2MPROJ6 Project

6

Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html

Integrated System Structures

Z.ZK

6

Student learn main design methodologies of analog, digital and optoelectronic integrated systems; Detailed description of the technological process for the IC production; CMOS technologies and its advanced sub-micron trends; IC chip topology, layout and design rules; Technology of micro-electro-mechanical systems MEMS.

R2M17SRS Wave Propagation for Wireless Links

The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The syllabus includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communications in various frequency bands.

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 30

The role of the block: PV

Code of the group: 2018_MEKPV4

Name of the group: Compulsory subjects of the programme

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 5 courses

Credits in the group: 30

Note on the group:

Specializace technologie internetu věcí

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
B2M31ADAA	Adaptive signal processing Pavel Sovka, Radoslav Bortel Radoslav Bortel (Gar.)	Z,ZK	6	2P+2C	Z	PV
B2M31AEDA	Experimental Data Analysis Jan Rusz Jan Rusz Jan Rusz (Gar.)	Z,ZK	6	2P+2C	Z	PV

B2M17ANT	Antennas Pavel Hazdra, Miloš Mazánek, Jan Kra ek Jan Kra ek Pavel Hazdra (Gar.)	Z,ZK	6	2P+2L	L	PV
B2M37ART	Architecture of radio receivers and transmitters Josef Dobeš, Pavel Ková Karel Ulovec Pavel Ková (Gar.)	Z,ZK	6	2P+2L	Z	PV
B2M32DSAA	Network Application Diagnostics Radek Ma ik Radek Ma ik Radek Ma ik (Gar.)	Z,ZK	6	2P + 2C	Z	PV
B2M37DKM	Digital communications Jan Sýkora Jan Sýkora (Gar.)	Z,ZK	6	3P+1C	Z	PV
B2M32IBEA	Information Security Tomáš Van k Petr Hampl Leoš Bohá (Gar.)	Z,ZK	6	2P + 2C	L	PV
B2M37KDKA	Coding in digital communications Jan Sýkora Jan Sýkora Jan Sýkora (Gar.)	Z,ZK	6	3P+1C	L	PV
B2M34NIS	Design of Integrated Circuits Ji í Jakovenko, Jan Novák Jan Novák Ji í Jakovenko (Gar.)	Z,ZK	6	2P+2C	L	PV
B2M34NSV	VLSI System Design Pavel Hazdra, Jakub Jirsa Pavel Hazdra Pavel Hazdra (Gar.)	Z,ZK	6	2P+2L	Z	PV
B2M34ZETA	Custom Electronics Design Vít Záhlava Vít Záhlava Vít Záhlava (Gar.)	KZ	6	2P+2L	Z	PV
B2M37OBFA	Image Photonics Lukáš Krauz, Petr Páta Petr Páta (Gar.)	Z,ZK	6	2P+2L	Z	PV
B3M35PSR	Real -Time Systems Programming Michal Sojka Michal Sojka Michal Sojka (Gar.)	Z,ZK	6	2P+2C	Z	PV

B2M31ADAA Adaptive signal processing Z,ZK 6 This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Z,ZK **Experimental Data Analysis** 6 In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation and interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of semestral project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to teach students to use critical thinking and to acquire additional knowledge in solution of practical tasks. Antennas Student will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various types of antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antenna parameters) B2M37ART Architecture of radio receivers and transmitters The subject deals with the architecture of the radio receivers and transmitters and software radio. The student s familiarize with the design and the modern methods of optimization of the radio receivers and transmitters' functional blocks and with the phenomena related with frequency conversion, noise sources and noise analyses. They learn conceptual radio receiver and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and their practical implementation. B2M32DSAA **Network Application Diagnostics** Z,ZK 6 The first part of the course deals with complex network structures, their characteristics identification, with recognition of both structural static and dynamic patterns, and anomaly detection. The second part of the course is focused on specification methods of static and dynamic behavior and their verification. The use of the methods is demonstrated on examples dealing with network application issues. The special treatment is dedicated not only to network and cloud applications, but also to posibilities of diagnostic process automation. The students gain sufficient skills in seminars where they solve practical problems in digital network domain. Z,ZKB2M37DKM Digital communications The course provides fundamentals of digital communications theory: modulation, classical coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications theory courses B2M32IBEA Information Security Z.ZK The Information Security course provides a complete source of information on the field of security of information systems and information technologies. The most of information in today society is created, transferred, stored in electronic form so information security is very important part of it. Technical background for information security is provided by cryptology. Coding in digital communications This course extends and deepens the topics of the basic communication theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-node/multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. B2M34NIS **Design of Integrated Circuits** Z,ZK Main tasks of integrated circuits designer; design abstraction levels - Y chart. Definitions of specification, feasibility study, criteria for technology and design kits selection. Integrated systems design and simulation methodologies. Main features of full custom design, gate array, standard cells, programmable array logic. Design aspects of RF and mobile low power systems. Verilog-A, Verilog-AMS, VHDL-A. Logic and physical synthesis. Frond End and Back End design. Floorplanning, place and route, layout, parasitic extraction, time analysis, testbenches design and verification. B2M34NSV VLSI System Design Z.ZK 6 Introduction to basic building blocks, architecture and design methodologies of advanced VLSI systems. Structure and design of digital and analogue integrated circuit subsystems. Integrated system description and synthesis using cell libraries and IP cores. Synchronization, power consumption and parasitics reduction issues. Testing and reliability of integrated systems. In seminars and labs, the hardware description language VHDL will be explained and used for practical design, synthesis and testing of a system on chip. B2M34ZETA **Custom Electronics Design** ΚZ The course deals with the design methodology of advanced custom electronics. The aim is to convert theoretical knowledge of previous studies into specific proposals for practical

applications. Student are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on real experience in development

The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing.

Z.ZK

and production, showing the latest technological trends and component base.

Electron optics. Image processing in biosystems. Image processing for photonics.

Image Photonics

B2M37OBFA

B3M35PSR Real -Time Systems Programming

z,zk

6

The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of time-critical motion control application which will require full utilization of RTOS features. All the tasks at the labs will be implemented in C (or C++) language.

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

The role of the block: V

Code of the group: 2018 MEKH

Name of the group: Humanities subjects

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
B0M16FIL	Peter Zamarovský Peter Zamarovský Peter Zamarovský (Gar.)	Z,ZK	5	2P+2S	Z,L	V
B0M16HVT	History of science and technology 2 Marcela Efmertová, Jan Mikeš Marcela Efmertová (Gar.)	Z,ZK	5	2P+2S	Z,L	V
B0M16HSD1	History of economy and social studies Marcela Efmertová	Z,ZK	5	2P+2S	Z,L	V
B0M16PSM	Psychology Jan Fiala Jan Fiala (Gar.)	Z,ZK	5	2P+2S	Z,L	V
A003TV	Physical Education	Z	2	0+2	L,Z	V
B0M16TEO	Theology Vladimír Sláme ka Vladimír Sláme ka (Gar.)	Z,ZK	5	2P+2S	Z,L	V

Characteristics of the courses of this group of Study Plan: Code=2018_MEKH Name=Humanities subjects

B0M16FIL		Z,ZK	5
B0M16HVT	History of science and technology 2	Z.ZK	5

This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the history and traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technical engineers

B0M16HSD1	History of economy and social studies	Z,ZK	5
This subject deals with t	the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its ain	ns and achieved r	esults as well as
the social and cultural d	evelopment and coexistence of the various ethnical groups in the Czech countries.		

	9		
B0M16PSM	Psychology	Z,ZK	5
A003TV	Physical Education	Z	2
B0M16TEO	Theology	Z,ZK	5

This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic disciplines are gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christianity - religion from which graws our civilization up.

Code of the group: MTV

Name of the group: Physical education

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

Credits in the group: 0 Note on the group:

Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) TVV Ζ 0 0+2Z,LV Physical education A003TV 2 L.Z Ζ 0+2**Physical Education** V TV-V1 Ζ 1 Z,L0+2Physical education TVV0 Ζ 0 0+2Z,L Physical education

TVKLV	Physical Education Course	Z	0	7dní	L	V
TVKZV	Physical Education Course	Z	0	7dní	Z	V

Characteristics of the courses of this group of Study Plan: Code=MTV Name=Physical education

A003TV	Physical Education	Z	2
TVV	Physical education	Z	0
TV-V1	Physical education	Z	1
TVV0	Physical education	Z	0
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0

Code of the group: 2018_MEKVOL 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\\

BOM16FIL BOM16FISD1 History of economy and social studies 7, ZK BOM16HSD1 History of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its aims and achieved results as we the social and cultural development and coexistence of the various ethnical groups in the Czech countries. BOM16HVT History of science and technology 2 This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the histor traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technology BOM16PSM Psychology Z,ZK BOM16TEO Theology This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipate gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipate gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipance gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christian and the subject is determined not only to believer students will not know and to know the reliable threelogy. BZM17ANT Antennas Sudent will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstra	Code	Name of the course	Completion	Credits
BOM16HSD1 History of economy and social studies Z,ZK This subject deals with the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its aims and achieved results as we the social and cultural development and occisitence of the various ethnical groups in the Czech countries. BOM16HVT History of science and technology 2 This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the histor radiations of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technical education and professional organizations, the process of shaping scientific life and the influence of technical education and professional organizations, the process of shaping scientific life and the influence of technical education and professional organizations, the process of shaping scientific life and the influence of technical education and professional organizations, the process of shaping scientific life and the influence of technical education and professional organizations, the process of shaping scientific life and the influence of technical education in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discignare gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christian and provides to students will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various type mantennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antenna parameters). BZM17SBS Wave Propagation for W	A003TV	Physical Education	Z	2
This subject deals with the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its aims and achieved results as we the social and cultural development and coexistence of the various ethnical groups in the Czech countries. BOM16HVT	B0M16FIL	·	Z,ZK	5
This subject deals with the history of the Czech society in the 19th - 2'th centuries. It follows the forming of the Czech political representation, its aims and achieved results as we the social and cultural development and coexistence of the various ethnical groups in the Czech countries. BOM16HVT	B0M16HSD1	History of economy and social studies	Z,ZK	5
This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the histor traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technical education and professional organizations, the process of shaping scientific life and the influence of technical education in the subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipate gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christical grounding but also above all to ones who want to get know Christical grounding but strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various type antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antenna parameters). B2M17SBS Wave Propagation for Wireless Links Z,ZK The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing Z,ZK This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. Experimental Data Analysis Z,ZK In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental m	This subject deals with the		and achieved result	ts as well as
traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of techniques to the engineers BoM16PSM	B0M16HVT	History of science and technology 2	Z,ZK	5
BOM16PSM Psychology Z,ZK BOM16TEO Theology Z,ZK BOM16TEO Theology Z,ZK BOM16TEO Theology Z,ZK This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipare gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christer of the provides to students will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various type antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antenna parameters). BZM17SBS Wave Propagation for Wireless Links BZM17SBS Wave Propagation for Wireless Links The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. BZM31ADAA Adaptive signal processing Z,ZK This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. BZM31AEDA Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of sem project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to	This subject traces histori	cal developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate stud	ents' interest in the	history and
BOM16TEO Theology This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discip are gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Chris religion from which graws our civilization up. B2M17ANT Antennas Student will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various type antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antenna parameters). B2M17SBS Wave Propagation for Wireless Links The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis', students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of sem project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP meth	traditions of the subject, v		and the influence	of technical
This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic discipare gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christonian and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antening parameters). B2M17SBS Wave Propagation for Wireless Links Z,ZK The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing Z,ZK This course provides a basic discourse on adaptive algorithms for filletring, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis Z,ZK In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of sem project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Advanc	B0M16PSM	Psychology	Z,ZK	5
are gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Chris-religion from which graws our civilization up. Rayman				5
B2M17ANT Antennas Z,ZK Student will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various type antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antening parameters). B2M17SBS Wave Propagation for Wireless Links Z,ZK The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing Z,ZK This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. E				
Student will get strong knowledge about theory of electromagnetic field radiation and basic principles of antenna design. Methods of analysis are demonstrated on various type antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of antening parameters). B2M17SBS Wave Propagation for Wireless Links Z,ZK The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing Z,ZK This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis Z,ZK In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of sem project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK B2M31DSP Cardinal learn the methods of digital smallysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis o		- religion from which graws our civilization up.		
antennas and their arrays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical (measurement of anteniparameters). B2M17SBS Wave Propagation for Wireless Links Z,ZK The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing Z,ZK This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis Z,ZK In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of sem project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital sanalysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the re	B2M17ANT	Antennas	Z,ZK	6
The aim of the course is to study the wireless transmission channel in real environments focusing on wave propagation for planning of terrestrial and satellite wireless links. The sy includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA Adaptive signal processing This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis Z,ZK In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of semproject, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of analyses.		ays. Seminars are both theoretical (analytical and numerical calculation using MATLAB and EM simulators CST) and practical		
includes both deeper theoretical foundations of radio wave propagation in the atmosphere as well as ITU-R design procedures for terrestrial and satellite, fixed and mobile communic in various frequency bands. B2M31ADAA	B2M17SBS	Wave Propagation for Wireless Links	Z,ZK	6
in various frequency bands. B2M31ADAA Adaptive signal processing				•
This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming. B2M31AEDA Experimental Data Analysis Z,ZK	includes both deeper theor		ed and mobile com	munications
B2M31AEDA Experimental Data Analysis Z,ZK In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of semproject, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital sanalysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of sanalyses.	B2M31ADAA	Adaptive signal processing	Z,ZK	6
In the course of subject "Experimental Data Analysis", students will acquire knowledge regarding fundamental methods for data analysis and machine learning for evaluation interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of sem project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of sanalyses.		This course provides a basic discourse on adaptive algorithms for filtering, decorrelation, separation and beamforming.		
interpretation of data. In the course of practical lectures, students will solve individual tasks using real data from signal processing in neuroscience research. In the course of semproject, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of sanalyses.				6
project, student will solve complex task and present obtained results. The aim of the subject is to introduce practical application of fundamental statistical methods as well as to students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of analyses.	•		•	
students to use critical thinking and to acquire additional knowledge in solution of practical tasks. B2M31DSP Advanced DSP methods Z,ZK The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of analyses.	•			
The course follows the basic course in signal processing and introduces advanced methods of analysis and digital signal processing. Graduates will learn the methods of digital s analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of analyses.	project, student will solve		al methods as well	as to teach
analysis and be able to practically use them. They learn to know the conditions of use of correlation, spectral and coherent analysis of random signals. They will became familia methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of analyses.	B2M31DSP	Advanced DSP methods	Z,ZK	6
methods of signal decomposition and independent component analysis and the time-frequency transformations. Emphasis will be placed on an ability to interpret the results of analyses.				
analyses.			•	
	methods of signal decom		o interpret the resu	ılts of signal
B2M32BTSA Wireless Technologies Z,ZK	B2M32BTSA	Wireless Technologies	Z,ZK	6

of wireless networks, their operation or development of wireless networks components.

EBM202PSA Network Application Diagnosistics The first part of the source deads with complex removes sourcest, the ordinated entries desiration, with supplication of both executated and systems and an executive desirations. The part of the source deads with complex removes the control of the source deads with complex removes the removes the complex removes the remov				
steedston. The secondagen of the course is focused on specification methods of section and their well-colors. The use of the methods is demonstrated or each professor with colors professor students again sufficient skills in seminars where they solve pacical problems in digital resources from colors and patients in such interesting all sufficient skills in seminars where they solve pacical problems in digital resources formation. The SEMEZIBEA Interest shall is seminare where they solve pacical problems in digital resources formation. EXZX. In 6 The Information Security course provides a complete good of information on the last of security of information security. EXZX. In 6 The Information Security course provides a complete good of information on the last of security of information security. EXXX. In 6 The Information Security course provides a complete good of information on the last of security of information security. EXXX. In 6 The SEMEZIBEA In 6 The Information Security course provides a complete good of information on the last of security of information security. EXXX. In 6 The SEMEZIBEA IN	B2M32DSAA	Network Application Diagnostics	Z,ZK	6
stealing with network application issues. The special framework is more survived trees, you be practical proteined in digital review for the probabilities of disproyers provides a complete source of information. Security is severed to the formation security in the formation security is covered to severe the formation of the formation security in the proteined from the first of the country grants and information technologies. The meet of information is to severe proteined from the first of the country grants and information technologies. The meet of information is country to severe proteined from the first of the country of the first of the first of the first of the country of the first of the first of the first of the fi		, , , , , , , , , , , , , , , , , , , ,		, ,
BM32IBEA Information Security corresponds according to the store and security or information security is created interestence; stored in electronic terms of the store interestence in the store				
The Information Security cause provides a complete succes of information on the felf of security of information security is reported by control aborgs under information security is reported by cyprishings. BZMSZMKSA Mobile Networks A Mobile Networks Mobile Networks A Mobile Networks Mobile Networks Mobile Networks A Works Mobile Networks Mobile Networ	J	- · · · · · · · · · · · · · · · · · · ·	•	
socially in created, transferrers, better in electron from an information security is very important part of it. Rechincial background for information security is provided by explosing Mobile Networks BEM032PST BEM032PST Advanced Networks with special for the count of the provided by the provided b	B2M32IBEA	Information Security	Z,ZK	6
BEMSAINSA Mobile Networks or includes principles and functionalities of mobile networks with special to experienced principles and functionalities of mobile networks with special to experienced principles and functionalities of mobile networks with special to experienced principles and functionalities of mobile networks and principles of CSML UNTS, LTEATEA, and SSW tibe experienced. These networks principles for future mobile networks (SCI) will be experienced. BEMSAIPST CANAGED Network Technologies expense situation from the course is a set observed principle. The course is structured and focused on explaining the function of advanced networks, protocole as used in modern data networks or today and incomovary. Suchera villaging principles are previous assumed to a modern and an expense of today and incomovary. Suchera villaging principles are previous assumed to a modern principle and principles and previous and an expense of the course is set developed in a developed with an expense of the course is set to developed in a developed villaging and an expense of the course is set to developed the analysis of the course is set to developed the analysis of the course is set to developed the analysis of the course is set to developed the analysis of the course and the course of the course of the course of the course of the course and the course of the c				- 1
The features introduce principles and functionalises of mobile networks with special took on currently deployed bethnologies and hunture mobile networks (SV). UNTS, ITELTE-TA, and SV will be epithnet. Then, scheduled by enthnologies of the problems of the problems. The problems of the				
BM32PST Avanced Network Technologies expands dutient in the expansion. These settled key technologies for fauture mobile networks (Edwards Network Technologies and Avanced Network Technologies. The course is particularly oriented and focused or explaining the incident of advanced networks, multicast couring. IP-6, and MPLS networks. Part of the course is also devoted to a detailed explanation of transport protocols. TCP/UDP and a morner in which his was applicable on an actes in transportation services on ETP/UDP and a morner in which his was applicable on an actes in transportation services. TCP/UDP and a morner in which his was applicable on the design of digital and analog systems. It demonstrates the new possibilities of implementation and application of transport protocols. TCP/UDP and a morner in which his was applicated and biochemical principles. It is present a primarily MIMCS extendingly that necesses reliability with 11st similarity. The course death with a system integration applied in the design of digital and analog systems. It demonstrates the new possibilities of implementation and application of integrated increases. The course death with a system integration applied in the design of digital and analog systems. It demonstrates the new possibilities of implementation and application of integrated increases. The course of the course of an activation of the course of annotation course. The course of annotation course of the course of annotation course. The course of the course of annotation course. The course of the course of annotation course of the course of annotation course. The course of the course of annotation course of the course of annotation course. The course of th			· '	- 1
Subject Advanced Network Technologies expands studented for obtained more received in the course is practically oriented and tobused or explaining the inclinant of advanced networks, multicust routing, IP-40, and MPLS networks. Part of the course is size decorate to a desired received in the sause like inferior produces TCP4/UP and a manner in which software applications can across transportation sources of TCP9/UP and a manner in which software applications can across transportation sources of TCP9/UP and networks. BZM34MST				
Subject Accounced Network Technologies expands students knowledge of modern network technologies. The course is practically oriented and focused or explaining the inclinant of accounted network protocols as used in modern data networks of today and thormows. Subternation of temporary protocols. TCP/UDP and a manner in which shawn applications can across transporation survivors. TCP/UDP and a manner in which shawn applications can across transporation survivors. TCP/UDP and networks. BZM34MST Microsystems Z.Z.K 6 The course deads with system integration applied in the design of digital and analog systems. It demonstrates the new possibilities of implementation and application of integrated control integration design in the design of digital and analog systems. It demonstrates the new possibilities of implementation and application of integrated integration applied in the design in display and analog systems. It demonstrates the new possibilities of implementation and application of integrated integration and protocols. The course design will be applied to the course in application of the course in the course of integrated course integrated in the course integrated in the course of integrated course integrated integra	B2M32PST	Advanced Networking Technologies	Z,ZK	6
networks, rudicinat routing, IPv6, and MPLS networks. Part of the course is also devoted to a detailed explanation of transport protocols TCP/UDP and a network popilization and populations and access transportations services of ICPVP data networks. BZM34MST Microsystems ZZK 6 The course deals with system integration applied in the design of digital and analysing systems. It demonstrates the new possibilities of implementation and application on integration integration connections devices based on various physical and biochemical physicals in disconsistent in the course of the protocologies in the receivance in the receivance of the protocologies in the receivance in the receivance in the receivance of the receivance in the receivance in the receivance are presented the principles of tonic strategies in the receivance are presented the principles of tonic strategies in the receivance of the receivance are presented the principles of tonic strategies in the receivance are presented the principles of tonic strategies in the receivance of the receivance are presented the principles of tonic strategies and the receivance are presented the principles of tonic strategies and the receivance are presented to the receivance are		Network Technologies expands students' knowledge of modern network technologies. The course is practically oriented and focused	on explaining the	function of
BEM34MST Microsystems Microsystems Service of ICNPP data networks. The course deals with system integration applied in the design of digital and analog systems, it demonstrates the new possibilities of implementation and application of integrated intercelectronic devices based on visions physical and biochemical principles. Including basic applications in microsystems the modern action dements and microactusions, whose operation is based on fundamental physical and biochemical principles, including basic applications in microsystems the modern action dements and microactusions whose operation is based on fundamental physical and biochemical principles, including basic applications in microsystems therefore the modern action dements and microactusions whose operation is based on fundamental physical and biochemical principles, including basic applications in microsystems design and stratification of specification, fleasibility study, criteria for technology and design kind studies and seal of fundamental physical and based in microsystems design and simulation methodologies. Main features of full custom design, past array, stunder cells, programmable array logic. Design aspects of RF and mobile two privar systems, kellings. A lyeriog-AMS, VHOL-A. Logic and physical synthesis. Frond End and Base End design. Flooripannia, place and route, layout, parallel extraction, time analysis, testiborchologies when description and synthesis using cell libraries and IP process. Synchronization, power consumption and parasitistic reduction issues. Testing and relations of systems and seal but the heavises description in language VHoL but the explaned and supplication issues. Testing and relations of systems of the introduction is sues. Testing and relations of the parallel process for the IC productions of the parallel process for the IC production is subsequent and interesting of a system on only. **EXM34MST** **EXM34MST** **EXM34MST** **EXM34MST** **EXM34MST** **EXM34MST** **EXM34MST** **EXM34MST** **EXM34M			-	
EMASAINS Microsystems Z.ZK 6 The course deals with system integration applied in the design of digital and analogy systems. It demonstrates the new possibilities of implementation and application of integrated incredeterionic devices based on various physical and into internical principles. It presents primarily MEMS technology that increases reliability with all its attributes. The course presents the modern action devices based on various physical and into internical principles. It presents primarily MEMS technology that increases reliability, with all its attributes to consequence of the modern action and internical principles of the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of book screens, microgenerators of electrical enteriors. In the course are presented the principles of the screens of th	networks, multicas		a manner in whic	n software
The course deals with systems integration applied in the design of digital and annalog systems. It demonstrates the new possibilities of high starthulus. The course presents the modern action elements and microactuators, whose operation is based on fundamental physical and biochemical principles, including basic applications in microamal-pulsion, increases reliability with all starthulus. The course presents in the modern action elements and microactuators, whose operation is based on fundamental physical and biochemical principles, including basic applications in microamal-pulsion, increases and	B2M34MST		7 7K	6
the modern action elements and microacticators, whose operation is based on fundamental physical and blochemical principles, including basic applications in microarrelipolation, increasing interrorotors, microrotors, microarrely perincipolation, included the principles of tourist designation of the production of the principles of tourist designation of the production of		·		
microtrobotos, microdrives, microsurgery, multimedia, medical, industrial control, automotive, etc. In the course are presented the principles of touch screens, microgenerators of electrical energy. There are mentioned basic elements of the use of nanotechnology and memberation display and enterior to the course of nanotechnology and memberation of the section of the production of the production of the section of the secti	microelectronic dev	ices based on various physical and biochemical principles. It presents primarily MEMS technology that increases reliability with all its	attributes. The cour	se presents
energy. There are mentioned basic elements of the use of nanotechnology and nanoelectronic structures and basic microsystem technologies. BASMANUS Main tasks of Integrated circuits designer design abstraction levels. Y churt. Definitions of specification, feasibility study, criteria for technology and degraph tils selection. Integrated systems design and simulation membrologies. Main featings of the selection and simulation membrologies. Main featings are selected to the selection of the selection is selected by selection of the selection o				
B2M34NIS Design of Integrated Circuits designer design abstraction levels. Y chart. Definitions of specification, fisasibility study, criteria for technology and design its selection. Integrated systems design and simulation methodologies had in features of full custom design, gate array, standard cells, programmable array logic. Design aspects of FE and mobile flow prover systems. Verilog-AMS, VHOL. A. Logic and physical synthesis. Front End and Back End design. Propriating, place and route, layout, parasitic extraction, time analysis, testbenches design and verification. B2M34NSV VLS (System Design Z.ZK 6 Introduction to basic building blocks, architecture and design methodologies of advanced VLS systems. Verilog-AMS (System) because of significant analogue integrated cross systems. Verilog-AMS (System) because of significant design and analogue integrated cross systems. Integrated system description and systems and significant systems. The significant is an advanced substitution of the significant systems. The significant systems is an advanced substitution of the significant systems. Definited description of the technological process for the IC productors. CMOS technologies and its advanced sub-micron trends. It chips begology, legical and deploced and used for previous studies into specific proposals for the IC productors. CMOS technologies and its advanced sub-micron trends. It chips begology, legical and description of the technological process for the IC productors. CMOS technologies and its advanced sub-micron trends. It chips begology, legical and description of the technological process for the IC productors. CMOS technologies and its advanced sub-micron trends. It chips begology, legical and description of the technological process for the IC productors. CMOS technologies and its advanced sub-micron trends. It is a sub-micron trends to the sub-micron trends and trends to the sub-micron trends. It is a sub-micro				of electrical
Main tasks of integrated circuits designer, design, abstraction levels - Y churt. Definitions of specification, feasibility study, citration for technology and design hits selection, integrated systems design and simulation methodologies. Main features of flut citration design, gate array, standard cells, programmable array logic. Design more integrated systems, Verilog-A, Verilog-AMS, VHDL-A. Logic and physical synthesis. Front End and Black End design, Recordanting, place and route, layout, parasitic extraction, time analysis, testing and extraction integrated systems. Structure and design of digital and analogue integrated circuit subsystems transgrated systems description and synthesis using cell libraries and IP cortes. Synthronization, power consumption and parasition reduction issues. Testing and reliability of integrated systems. It is sentimate and laborated and integrated systems and the cortes. Synthronization, power consumption and parasition reduction issues. Testing and reliability of integrated integrated systems. It is sentimated and systems and the cortex of th				6
systems, Verligo-A, Verligo-A, Merligo-AMS, VHIDL-Å. Logic and physical synthesis. Frond End and Back End design, Floorpianning, place and route, layout, parasitic extraction, the analysis testibutions bears to building blocks, architecture and design methodologies of advanced VLS by systems. Structure and design of digital and analogue integrated circuit subsystems, integrated system description and synthesis using cell libraries and IP cores. Synchronization, power consumption and parasitics reduction issues. Testing and reliability of integrated systems, in seminars and lates, the hardware description in an application of the system Structures. The systems is subsystems of the system Structures and design, and the synthesis and testing of a system on ship. **BRM34SIS** **BRM34SIS** **BRM34ETA** **Custom Electronics Design **Extructures** **Extructures*			, ,	' '
testbenches design and verification. VLSI System Design Introduction to basic building blocks, architecture and design methodologies of advanced VLSI systems. Structure and design of digital and analogue integrated circuit subsystems, integrated system description and symbesis using cell libraries and PC cores. Synchronization, power consumption and passibles and esting of all systems or description in anguage very PLD. will be equipled and used for practical desting, systembles and testing of all systems or description and systems. Integrated System Structures BZM34SIS Integrated System Structures BZM34SIS Integrated System Structures Integrated System	systems design an	d simulation methodologies. Main features of full custom design, gate array, standard cells, programmable array logic. Design aspect	s of RF and mobile	e low power
EAM3/AKSV Continued to basic building blocks, architecture and design methodologies of advanced VLSI systems. Structure and design of digital and analogue intergrated crucil subsystems in seminars and labs, the hardware description and synthesis using cell libraries and IP cores. Synchronization, power consumption and parasitics reduction issues. Testing and reliability of integrated systems. In seminars and labs, the hardware description languages VPIDL will be explained and used for practical design, synthesis and testing of a system on which systems. In the core of the	systems. Verilog-A		sitic extraction, time	e analysis,
Introduction to basic building blocks, architecture and design methodologies of advanced VLSI systems. Structure and design and analogue integrated oricuit subsystems integrated system description and systems and escription and parasitics and reliability of intergrated systems. In seminars and labs, the hardware description language V+IDL will be explained and used for practical design, synthesis and testing of a system on chip. BZM34SIS Integrated System Structures Z.ZK 6 Student learn main design methodologies of analog, digital and optoelectronic integrated systems; betailed description of the technological process for the IC production, CMOS technologies and its advanced sub-micron trends; IC chip topology, knyout and design rules, Technology of micro-electro-mechanical systems MEMS. BZM34ETA Custom Electronic SDESign Tules, Technology of micro-electro-mechanical systems MEMS. BZM34ETA Custom Electronic SDESign Tules, Technology of micro-electro-mechanical systems MEMS. BZM34ETA Custom Electronic SDESign and manufacturing, This course is based on real experience in development and production, showing the latest technological trends and component base. BZM37ART Architecture of final protective sizes and transmitters. BZM37ART Architecture of the radio receivers and transmitters and software radio. The student is familiarize with the design and the modern methods of opinization of the radio receivers and transmitter for facilo receivers and transmitters and software radio. The student is familiarize with the design and the modern method receiver and transmitter design, including the level and frequency plans and their opinization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the level and frequency plans and their opinization. The course also deals with the activation of the communication systems and protection and protection and protection in the course also deals with the activation of the modern radio	DOMO (NIC) /		7 71/	
Integrated system description and synthesis using cell libraries and IP cores. Synchronization, power consumption and parasitics reduction issues. Testing and reliability of integrated systems. In seminars and labs, the hardware description language VHD. will be explained and used for practical design, synthesis and testing of a system on roll. B2M34SIS Integrated System Structures Z,ZK 6 Student learn main design methodologies of analog, digital and optoelectronic integrated systems; betailed description of the technological process for the 10 production. CMOS technologies and its advanced sub-micron trends; IC chip toplogy, joyus und design rules. Technology of micro-electro-mechanical systems MEMS. B2M34ZETA Custom Electronics Design XZ 6 The course deals with the design methodology of advanced custom electronics. The aim is to convert theoretical knowledge of previous studies into specific proposals for practical applications. Student are getting familiar with the problems encountered in the proteins encountered in the proteins of the proteins of the proteins of the proteins. The aim is to convert theoretical knowledge of previous studies into specific proposals for practical applications. Student are getting familiar with the problems encountered in the proteins and production, showing the letters technological trends and component base on real experience in development and productions. The production of the proteins of the proteins and productions. The productions of the proteins and productions and productions and productions and productions. The productions are provided to the real of the proteins and transmitters and office the advanced transmitters and continued and the proteins and productions. The productions are provided as and the proteins and transmitters and office receivers and transmitter design, including the level and frequency convenients, noise sources and noise analyses. The plan proteins of the modern radio receiver and transmitter design, including the level and freque				- 1
BZM34SIS Integrated System Structures Student learn main design methodologies of analog, digital and optoelectronic integrated systems; Detailed description of the technological process for the IC production; CMOS technologies and its advanced sub-micron trends; IC chip topology, is yout and design unles, Technology of micro-electro-mechanical systems MEMS. BZM34ZETA Custom Electronics Design KZ 6			-	· ·
Student learn main design methodologies of analog, digital and optoelectronic integrated systems. Detailed description of the technologies and its advanced sub-micron trends; IC chip topology, layout and design rules; Technology of micro-electro-mechanical systems MEMS. BZM34ZETA Custom Electronics Design The course deals with the design methodology of advanced custom electronics. The aim is to convert theoretical knowledge of previous studies into specific proposals for practical applications. Student are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on real experience in development and production, showing the latest technological trends and component base. BZM37ART Architecture of the radio receivers and transmitters. Z,ZK 6 The subject deals with the architecture of the radio receivers and transmitters and software radio. The student is familiarize with the design and the modern methods of optimization of the radio receivers and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the level and frequency plans and their practical implementation. BZM37DKM Digital communications Digital communication Digital D	systems. I	n seminars and labs, the hardware description language VHDL will be explained and used for practical design, synthesis and testing	of a system on ch	ip.
B2M34ZETA Custom Electronics Design The course deals with the design methodology of advanced custom electronics. The aim is to convert theoretical knowledge of previous studies into specific proposals for practical applications. Student are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on real experience in development and productions, showing the latest technological trends and component base. B2M37ART Architecture of radio receivers and transmitters Architecture of radio receivers and transmitters B2M37ART Intended the architecture of the radio receivers and transmitters B2M37ART Intended to the radio receivers and transmitters functional blocks and with the phenomena related with frequency conversion, noise sources and noise analyses. They learn conceptual radio receiver and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receiver and transmitter design, including the level and frequency plans and their optimization. The course provides fundamentals of digital communications theory modulation, disascial coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications systems. BZM37KDKA Coding in digital co	1	· · · · · · · · · · · · · · · · · · ·	, ,	
B2M34ZETA Custom Electronics Design KZ 6 The course deals with the design methodology of advanced custom electronics. The aim is to convert theoretical knowledge of previous studies into specific proposals for practical projections. Student are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on real experience in development and production, showing the latest technological trends and component base. B2M37ART Architecture of radio receivers and transmitters and software radio. The student is familiarize with the design and the modern methods of optimization of the radio receivers and transmitters functional blocks and with the phenomena related with frequency conversion, noise sources and noise analyses. They learn conceptual radio receivers and transmitter of the receiver and transmitter of the practical implementation. B2M37DKM Digital communications Digital communications Digital communications Z,ZK 6 The course provides fundamentals of digital communications theory: modulation, classical oding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications between the control and principles. The data lines whic			· ·	n; CMOS
The course deals with the design methodology of advanced custom electronics. The aim is to convent theoretical knowledge of previous studies into specific proposals for practical applications. Student are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on real experience in development and production, showing the latest technological trands and component base. BZM37ART				6
applications. Student are getting familiar with the problems encountered in the professional electronic design and manufacturing. This course is based on real experience in development and production, showing the latest technological trends and component base. B2M37ART Architecture of the radio receivers and transmitters Architecture of the radio receivers and transmitters Architecture of the radio receivers and transmitters Architecture of the radio receivers and transmitters and software radio. The students familiarize with the design and the modern methods of optimization of the radio receivers and their and preceivers and their and preceivers and their and preceivers and their and preceivers and their particular tradio receivers and their particular production, noise sources and noise analyses. They learn conceptual radio receivers and their particular production, noise sources and noise analyses and place and the receiver and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and their particular productions in the process and their particular productions. B2M37DKM Digital communications Digital communication Digital communications Digital communication		· · · · · · · · · · · · · · · · · · ·		
B2M37ART Architecture of radio receivers and transmitters Z,ZK 6 The subject deals with the architecture of the radio receivers and transmitters and software radio. The student s familiarize with the design and the modern methods of optimization of the radio receivers and transmitters functional blocks and with the phenomena related with frequency conversion, noise sources and noise analyses. They learn conceptual radio receiver and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receiver and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receiver and transmitter design, including the level and frequency plans and their practical implementation. B2M37DKM Digital communications Digita				-
The subject deals with the architecture of the radio receivers and transmitters and software radio. The students familiarize with the design and the modern methods of optimization of the radio receivers and transmitter functional blocks and with the phenomena related with frequency conversion, noise sources and noise analyses. They learn conceptual radio receivers and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and transmitter design, including the flow of the provides an encessary fundamental background for subsequent more advanced construction of the communication short overval all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications. BZM37KDKA				
the radio receivers and transmitters' functional blocks and with the phenomena related with frequency conversion, noise sources and noise analyses. They learn conceptual radio receiver and transmitter design, including the level and frequency plans and their optical implementation. BZM37DKM Digital communications Digital communications Z,ZK 6 The course provides fundamentals of digital communications theory; modulation, classical coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications theory courses. BZM37KDKA Coding in digital communications theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-node/multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique focuses on turbo, LDPC, Space-Time codes and wireless Network coding. 4) Advanced decoding technique focuses and untili-user decoding capacity approaching channel codes. BZM37MAM Network and multi-user decoding is a fundamental too for decoding capacity approaching channel codes. BZM37MAM Network and multi-user decoding is a fundamental simple microprocessor system including connection of			, ,	
Receiver and transmitter design, including the level and frequency plans and their optimization. The course also deals with the digital signal processing blocks of the modern radio receivers and their practical implementation. B2M37DKM Digital communications The course provides fundamentals of digital communications theory: modulation, classical coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications theory courses. B2M37KDKA Coding in digital communications B2M37KDKA Coding in digital communication theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-node/multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. B2M37MAM Microprocessors B2M37MAM Microprocessors systems, make students familiar with on-chip peripherals, connect carried circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and com	•	·	•	
B2M37DKM Digital communications Digital communication Digital communications Digital communication Dig				
The course provides fundamentals of digital communications theory: modulation, classical coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communications steprovides a necessary fundamental background for subsequent more advanced communications theory courses. B2M37KDKA Coding in digital communications Z,ZK 6 This course extends and deepens the topics of the basic communication theory courses in the following main areas. 1) Advanced information theory in coding and Network Information flevory develop a framework for understanding the principles of the channel coding in single-user and multi-node/m		receivers and their practical implementation.		
built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications theory courses. BZM37KDKA Coding in digital communications Z,ZK 6 This course extends and deepens the topics of the basic communication theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-node/multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. BZM37MAM Microprocessors X,ZK 6 The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. BZM37OBFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image pro				'
E2M37KDKA Coding in digital communications Z,ZK 6 This course extends and deepens the topics of the basic communication in theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-node/multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. B2M37MAM Microprocessors B2M37MAM Microprocessors The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. B2M370BFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics, Image sensors - tube, CCD, CMOS, Image displays, Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended wit				- 1
B2M37KDKA Coding in digital communications Z,ZK 6 This course extends and deepens the topics of the basic communication theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-node/multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding, 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. B2M37MAM Microprocessors X,ZK 6 The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. B2M37OBFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework	=	· · · · · · · · · · · · · · · · · · ·	·=	- 1
This course extends and deepens the topics of the basic communication theory courses in the following main areas. 1) Advanced information theory in coding and Network Information Theory develop a framework for understanding the principles of the channel coding in single-user and multi-user scenarios. 2) The algebraic coding presents classical topics of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. B2M37MAM				
of block and convolutional codes. 3) Advanced coding technique focuses on turbo, LDPC, Space-Time codes and Wireless Network Coding. 4) Advanced decoding technique, namely iterative and multi-user decoding is a fundamental tool for decoding capacity approaching channel codes. B2M37MAM Microprocessors Microprocessors Microprocessors A Z,ZK 6 The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. B2M37OBFA Image Photonics The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will co		u u u	· '	
B2M37MAM Microprocessors X,ZK 6 The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implements simpler microprocessor system including connection of necessary peripherals and software design. B2M37OBFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics, and optical computing. Fourier optics, Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will f			٠.	
B2M37MAM Microprocessors Z,ZK 6 The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. B2M37OBFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will fir	of block and convol	, , , , , , , , , , , , , , , , , , , ,	d decoding technic	que, namely
The aim is to make students acquainted with the properties of microprocessor systems, make students familiar with on-chip peripherals, connect external circuit to the processor bus, and with implementation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C language and combination of both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. B2M37OBFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems, those failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitabilit	B2M37MAM		7 7K	6
both. After completion of this subject student should be able to design and implement simpler microprocessor system including connection of necessary peripherals and software design. B2M37OBFA		•		' '
B2M37OBFA Image Photonics Z,ZK 6 The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of	and with implement	tation of the memory or I/O space address extension. Next, taught the students to make simple program in the assembly language, C	language and cor	mbination of
B2M370BFA Image Photonics Z,ZK 6	both. After compl		ary peripherals and	d software
The subject offers a detailed overview of applied imaging photonic elements and systems. The subject deals with fundamentals of optics, Fourier optics and optical computing. Fourier optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. B2MPROJ6	DOMOZODEA	<u> </u>	7 71/	
Electron optics. Image sensors - tube, CCD, CMOS. Image displays. Image converters and amplifiers. Photography and holography - sensitometry and densitometry. Photonic (optical) computing. Electron optics. Image processing in biosystems. Image processing for photonics. Project Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of				
B2MPROJ6 Project Z 6 Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of	-			-
Independent work in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The project will be defended within the framework of a subject. Project list http://www.fel.cvut.cz/en/education/semestral-projects.html B3M35PSR Real -Time Systems Programming Z,ZK 6		Electron optics. Image processing in biosystems. Image processing for photonics.		
B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of		· ·		
B3M35PSR Real -Time Systems Programming Z,ZK 6 The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of	-			artment or
The goal of this course is to provide students with basic knowledge about software development for real-time systems, for example in control and embedded applications. The focus is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of				6
is on embedded systems equipped with a real-time operating system (RTOS). Lectures will cover real-time systems theory, which can be used to formally verify timing correctness of such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of		· · · · · · · · · · · · · · · · · · ·	· '	
such systems. Another set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have catastrophic consequences. During labs, students will first solve a few simple tasks to familiarize themselves with basic components of VxWorks RTOS and to benchmark the used OS and hardware (Xilinx Zynq). The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of	_			
The obtained metrics represent the typical criteria for assessing the suitability of a given platform for the given application. After the simple tasks, students will solve a complex task of	such systems. An	other set of lectures will introduce methods and techniques used for development of safety-critical systems, whose failure may have	catastrophic conse	equences.
	_	·		
The state of the s				ipiex task of
		The state of the s	- /34490.	

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 her branch of study, which will						
be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.						
TV-V1	Physical education	Z	1			
TVKLV	Physical Education Course	Z	0			
TVKZV	Physical Education Course	Z	0			
TVV	Physical education	Z	0			
TVV0	Physical education	Z	0			

For updated information see http://bilakniha.cvut.cz/en/f3.html Generated: day 2024-05-20, time 03:54.