

Doporu ený pr chod studijním plánem

Název pr chodu: Specialization Mobile Communications - Passage through study

Fakulta: Fakulta elektrotechnická

Katedra:

Pr chod studijním plánem: Electronics and Communications - Mobile Communications

Obor studia, garantovaný katedrou: Úvodní stránka

Garant oboru studia:

Program studia: Electronics and Communications

Typ studia: Navazující magisterské prezen ní

Poznámka k pr chodu:

Kódování rolí p edm t a skupin p edm t :

P - povinné p edm ty programu, PO - povinné p edm ty oboru, Z - povinné p edm ty, S - povinn volitelné p edm ty, PV - povinn volitelné p edm ty, F - volitelné p edm ty odborné, V - volitelné p edm ty, T - T lovýchovné p edm ty

Kódování zp sob zakon ení predm t (KZ/Z/ZK) a zkratk semestr (Z/L):

KZ - klasifikovaný zápo et, Z - zápo et, ZK - zkouška, L - letní semestr, Z - zimní semestr

íslo semestru: 1

Kód	Název p edm tu / Název skupiny p edm t (u skupiny p edm t seznam kód jejích len) Vyu ující, auto i a garantí (gar.)	Zakon ení	Kredity	Rozsah	Semestr	Role
BE2M32PST	Advanced Networking Technologies Leoš Bohá Zbyn k Kocur Leoš Bohá (Gar.)	Z,ZK	6	2P + 2L	Z,L	P
BE2M37DKM	Digital Communications Jan Sýkora, Pavel Puri er Pavel Puri er Jan Sýkora (Gar.)	Z,ZK	6	3P+1C	Z	P
BE2M31DSPA	Digital Signal Processing Petr Pollák Petr Pollák Petr Pollák (Gar.)	Z,ZK	6	2P+2C	Z	P
BE2M37MAM	Microprocessors Stanislav Vítek Stanislav Vítek Stanislav Vítek (Gar.)	Z,ZK	6	2P+2L	Z	P
BE2M32MKSA	Mobile Networks Robert Beš ák, Zden k Be vá , Pavel Mach Pavel Mach Zden k Be vá (Gar.)	Z,ZK	6	2P + 2L	Z	P
BEEZM	Safety in Electrical Engineering for a master´s degree Vladimír K la, Ivana Nová, Josef ernohous, Radek Havlí ek Radek Havlí ek Vladimír K la (Gar.)	Z	0	2BP+2BC	Z	P

íslo semestru: 2

Kód	Název p edm tu / Název skupiny p edm t (u skupiny p edm t seznam kód jejích len) Vyu ující, auto i a garantí (gar.)	Zakon ení	Kredity	Rozsah	Semestr	Role
BE2M17ANT	Antennas Pavel Hazdra, Miloš Mazánek, Jan Kra ek Jan Kra ek Miloš Mazánek (Gar.)	Z,ZK	6	2P+2L	L	P
BE2M17SBS	Wave Propagation for Wireless Links Miloš Mazánek, Jan Kra ek, Pavel Pecha Jan Kra ek Pavel Pecha (Gar.)	Z,ZK	6	2P+2C	L	P
BE2M32BTSA	Wireless Technologies Zbyn k Kocur, Zden k Be vá , Pavel Mach, Lukáš Vojt ch Ján Ku erák Zden k Be vá (Gar.)	Z,ZK	6	2P + 2L	Z,L	P
2018_MEKEPV6	Compulsory subjects of the programme BE2M37ART, BE2M37KDKA, (pokra ování viz seznam skupin níže)	Min. p edm. 5 Max. p edm. 5	Min/Max 30/30			PV

íslo semestru: 3

Kód	Název p edm tu / Název skupiny p edm t (u skupiny p edm t seznam kód jejích len) Vyu ující, auto i a garantí (gar.)	Zakon ení	Kredity	Rozsah	Semestr	Role
BE2MPROJ6	Projekt - project Zden k Be vá , Ivan Pravda, Jan Šístek, Pavel Máša, Lubor Jirásek, František Rund František Rund František Rund (Gar.)	Z	6	0p+6s		P
2018_MEKEPV6	Compulsory subjects of the programme BE2M37ART, BE2M37KDKA, (pokra ování viz seznam skupin níže)	Min. p edm. 5 Max. p edm.	Min/Max 30/30			PV

		5				
2018_MEKEVOL	Elective subjects	Min. p edm. 0	Min/Max 0/999			v

íslo semestru: 4

Kód	Název p edm tu / Název skupiny p edm t (u skupiny p edm t seznam kód jejích len) Vyu ující, auto i a garanti (gar.)	Zakon ení	Kredity	Rozsah	Semestr	Role
BDIP25	Diplomová práce - Diploma Thesis	Z	25	22s	L	P
2018_MEKEVOL	Elective subjects	Min. p edm. 0	Min/Max 0/999			v

Seznam skupin p edm t tohoto pr chodu s úplným obsahem len jednotlivých skupin

Kód	Název skupiny p edm t a kódy len této skupiny p edm t (specifikace viz zde nebo níže seznam p edm t)	Zakon ení	Kredity	Rozsah	Semestr	Role
2018_MEKEPV6	Compulsory subjects of the programme	Min. p edm. 5 Max. p edm. 5	Min/Max 30/30			PV
BE2M37ART	Architecture of Radio Receivers ...	BE2M37KDKA	Coding in Digital Communications	BE2M32DZSA	Digital Signal Processing in Tel ...	
BE2M32DSVA	Distributed Computing	BE2M32IBEA	Information Security	BE2M32THOA	Queueing Theory	
BE2M32RTK	Telephony Communication Control					
2018_MEKEVOL	Elective subjects	Min. p edm. 0	Min/Max 0/999			v

Seznam p edm t tohoto pr chodu:

Kód	Název p edm tu	Zakon ení	Kredity
BDIP25	Diplomová práce - Diploma Thesis Samostatná záv re ná práce inženýrského studia komplexního charakteru. Téma práce si student vybere z nabídky témat souvisejících se studovaným oborem, která vypíše oborová katedra i katedry. Práce bude obhajována p ed komisí pro státní záv re né zkoušky.	Z	25
BE2M17ANT	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).	Z,ZK	6
BE2M17SBS	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.	Z,ZK	6
BE2M31DSPA	Digital Signal Processing The subject gives overview about basic methods of digital signal processing and their applications (examples from speech and biological signal processing): discrete-time signals and systems, signal characteristics in time and frequency domain, Fourier transform, fast algorithms for DFT computation, introduction to digital filter design, digital filtering in time and frequency domain, decimation and interpolation and their usage in filter banks, basics of LPC analysis. Further details can be found at http://noel.feld.cvut.cz/vyu/be2m31dspa> ;	Z,ZK	6
BE2M32BTSA	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.	Z,ZK	6
BE2M32DSVA	Distributed Computing The course is focused on technologies that support distributed computing: on mechanisms ensuring reliable, efficient and secure connection of application processes, programming interfaces of communication channels and up-to-date middleware technologies. A significant part of lectures is dedicated to distributed algorithms that assure causality, exclusive access, deadlock detection/avoidance, fault-tolerance, mobile computing, and security.	Z,ZK	6
BE2M32DZSA	Digital Signal Processing in Telecommunication The goal of the subject is to make familiar with theory, methods and implementation of algorithms of the digital signal processing of one- and multi-dimensional signals related to the telecommunication technology.	Z,ZK	6
BE2M32IBEA	Information Security	Z,ZK	6

BE2M32MKSA	Mobile Networks	Z,ZK	6
<p>P edm t seznamuje s principy a funkcemi mobilních bu kových sítí zejména s ohledem na aktuáln nasazované a budoucí technologie pro mobilní komunikace. Student pochopí architekturu a principy fungování jednotlivých generací mobilních sítí od GSM, p es UMTS a LTE/LTE-A až k 5G. P edm t studenty seznámí i s vybranými technikami a zp soby komunikace pro budoucí mobilní sít (6G). Po absolvování p edm tu se studenti dokáží orientovat v problematice bu kových mobilních sítí a budou schopní ešit problémy spojené s provozem a plánováním t chto sítí.</p>			
BE2M32PST	Advanced Networking Technologies	Z,ZK	6
<p>The "Advanced Network Technologies" course is designed to expand students' insights into modern network technologies and deepen their understanding of advanced networking protocols within data networks. Students will engage in practical exercises involving Internet unicast routing, multicast routing, IPv6, and MPLS network design, using network simulation tools such as PacketTracer and EveNG. Given the course's emphasis on remote lab activities, instruction will predominantly be delivered online.</p>			
BE2M32RTK	Telephony Communication Control	Z,ZK	6
<p>The course is oriented to audio or video issues in telecommunication networks, both fixed and mobile. Students will learn principles of switching systems and their management as well as the course will provide them with an overview of signaling systems in central exchanges and networks. The focus is on digital switching systems as circuit as packet switch oriented, i.e. so-called next generation network (NGN) and voice communication in 4G networks. (VoLTE).</p>			
BE2M32THOA	Queueing Theory	Z,ZK	6
<p>The aim of the course is to present an overview of dimensioning of telecommunication networks on the basis of results of the queueing theory (QT) and to introduce possibilities of simulation and modelling of networks, both from the point of view of grade of service (GoS) and quality of service (QoS). Results of the QT are applied on different service systems and telecommunication networks being currently operated and developed. Theoretical knowledge about models of service systems can be applied on dimensioning of different service systems in real life - not only on the telecommunications one.</p>			
BE2M37ART	Architecture of Radio Receivers and Transmitters	Z,ZK	6
<p>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.</p>			
BE2M37DKM	Digital Communications	Z,ZK	6
<p>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.</p>			
BE2M37KDKA	Coding in Digital Communications	Z,ZK	6
<p>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.</p>			
BE2M37MAM	Microprocessors	Z,ZK	6
<p>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.</p>			
BE2MPROJ6	Projekt - project	Z	6
<p>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. List of possible topics: http://www.fel.cvut.cz/en/education/semestral-projects.html</p>			
BEEZM	Safety in Electrical Engineering for a master's degree	Z	0
<p>Školení seznamuje studenty všech program magisterského studia s elektrickými riziky oboru. Studenti získají pot ebnou elektrotechnickou kvalifikaci pro innost na VUT FEL v souladu s platnými p edpisy. Školení se provádí podle p edlohy BEZB. Obsahuje Opakované Základní školení BOZP.</p>			

Aktualizace výše uvedených informací naleznete na adrese <http://bilakniha.cvut.cz/cs/f3.html>

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