

E – Charakteristika studijního předmětu/Subject Specification					
Název studijního předmětu / Subject title	Electronic Circuits and Components				
Typ předmětu / Subject type	Compulsory elective		dopor. ročník / semester/ recommended year / semester	1 st year 2 nd term	
Rozsah studijního předmětu / Study load in hours and credits		hod. za týden / weekly load	2 + 2	Kreditů / Credits	5
Jiný způsob vyjádření rozsahu / Other expression of study load	14 weeks, each 2 hours of lectures and 2 hours of seminary				
Způsob zakončení / Assessment	written exam		Forma výuky / Form of teaching	lectures and labs	
Další požadavky na studenta / Other demands on students					
Vyučující / Lecturer	Doc. Ing. Ivan Doležal, CSc. Ing. Milan Kolář, CSc.				
Stručná anotace předmětu / Subject annotation	<p>The first part of the subject deals with selected, more complex analog and mixed circuits for instrumentation, control, electroacoustics, communication and radioelectronics. Further parameters of electronic devices are explained. Basic principles of some electronic systems (TV, FM stereo, GSM, GPS ...) are explained, too.</p> <p>The second part concentrates on a progressive design methodology of electronic equipments. The VHDL language is applied on a description of system behavior and a successive simulation by the development systems. The architecture of custom integrated circuits and their application in electronic systems are also proceeded.</p> <p>Laboratory works are aimed to selected analog circuits connected from real devices, a circuit simulation using PSPICE and FPGA configuration design and its evaluation on an evaluation board.</p>				
Informace ke kombinované nebo distanční formě / Information for students in external form of study					
Rozsah konzultací (soustředění) / Consultations, study meetings		hodin za týden / hours per week			
Rozsah a obsahové zaměření individuálních prací studentů a způsob kontroly / Individual student work – type, load, content and way of checking					
Studijní literatura a studijní pomůcky / Reading list and study utilities	<p>[1] Horowitz, P. – Hill, W.: The Art of Electronics. Cambridge University Press, 1989, 2nd ed. ISBN: 0-521-37095-7</p> <p>[2] Salcic, Z. – Smailagic, A.: Digital Systems Design and Prototyping. Kluwer Academic Publishers, 2000, ISBN 0-7923-7920-9</p> <p>[3] Perry Douglas L.: VHDL - Programming By Example. McGraw Hill, 2002, 4th. ed., ISBN 0-07-140070-2</p>				