

E – Charakteristika studijního předmětu/Subject Specification					
Název studijního předmětu / Subject title	Optional Module /Internat. Project W16 Hardware Programming				
Typ předmětu / Subject type	selectable obligatory subject		dopor. ročník / semester/ recommended year / semester	2nd year 1st term	
Rozsah studijního předmětu / Study load in hours and credits		hod. za týden / weekly load	2	Kreditů / Credits	5
Jiný způsob vyjádření rozsahu / Other expression of study load					
Způsob zakončení / Assessment	Written exam		Forma výuky / Form of teaching	Lecturers	
Další požadavky na studenta / Other demands on students					
The subject Hardware Programming is selectable from a catalogue of optional modules. It is provided together with a international project work. The amount for both components, the selectable obligatory subject and the project work is 5 credits.					
Vyučující / Lecturer	Professor Dr.-Ing. Stephan Kühne				
Stručná anotace předmětu / Subject annotation					
<ul style="list-style-type: none">- hardware of 8-Bit Microcontrollers (arcitecture, special function registers, bus-system, reset-logic, pin-layout, timers,- ANSI standard C language programming- interrupte-controlling, interrupt-priorities, mascable Interrupts- hardware description of the real time clock DS12887 (pin-layout, operation, signal-description, adress map, time-, calender- and alarm-locations, non-volatile RAM control-registers),- integration of hardware expansions- programm developpment in ANSI C with µVISION2 fraom the company KEIL-using of the printed board software EAGLEe from the german company CADSOFT- routing and board-design of printed-circuit boards- assembling and fitting of the printed board- soldering and commissioning of the printed board- test of the devellopped board with with software routines					
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>DS80C320/DS80C323 High-Speed/Low-Power Micro, Date Sheet of the 8-Bit-Microcontroller from the company DALLAS SEMINCONDUCTOR (Download from http://www.maxim-ic.com/)</p> <p>High-Speed Microcontroller User Guide, Handbook from the company DALLAS SEMINCONDUCTOR (Download from http://www.maxim-ic.com/)</p> <p>DS12887 Real-Time Clock, Data sheet from the company DALLAS SEMINCONDUCTOR (Download from http://www.maxim-ic.com/)</p> <p>Brian W. Kernighan, Dennis M. Ritchie: C. Programming Language, publisher: Prentice Hall, 04.1988, ISBN-13: 9780131103627, language: english</p> <p>Gary J. Bronson: A First Book of ANSI C, Fourth Edition, publisher: Course Technology, 01.2006, ISBN-13: 9781418835569, language: english</p>					