Linnéuniversitetet

Planning, 1DT301, Computer Technology, autumn 2019. /Anders Haggren.

Lec.	Day:	Date:	Time:	Room:	Content:	Lab:
F1	Tuesday	Sept. 3	$10^{15} – 12^{00}$	D1136	Introduction, Course start Repetition of binary and hexadecimal numbers, two's complement form.	
F2	Wednesday	Sept. 4	$08^{15} – 12^{00}$	D1136	Experimental environment, STK600, How to use ports. Assembly programming. **Introduction to lab1.**	
F3	Tuesday	Sept. 10	$10^{15} – 12^{00}$	D1136	Subroutine call, function of the STACK.	Lab 1. How to use the PORTs. Digital input/output.
F4	Wednesday	Sept. 11	$08^{15} – 12^{00}$	D1136	Using register pairs, subroutine call, random generator, **Introduction to lab2.**	
F5	Tuesday	Sept. 17	$10^{15} – 12^{00}$	D1136	Atmel AVR Assembler. Jumping and branching	Lab 2. Subroutines
F6	Wednesday	Sept. 18	$08^{15} – 12^{00}$	D1136	Using interrupts. **Introduction to lab3.**	
F7	Tuesday	Sept. 24	$10^{15} – 12^{00}$	D1136	Using timers and serial communication, USART, **Introduction to lab4.**	Lab 3. Interrupt routines
C1	Wednesday	Sept. 25	$08^{15} – 12^{00}$	D1136	*Introduction to C-programming language. Lars Karlsson.*	
F8	Tuesday	Oct. 1	$10^{15} – 12^{00}$	D1136	Interfacing to Hitachi display. **Introduction to lab5.**	Lab 4. Timer and UART.
C2	Wednesday	Oct. 2	$08^{15} – 12^{00}$	D1136	*Introduction to C-programming language. Lars Karlsson.*	
F9	Tuesday	Oct. 8	$10^{15} – 12^{00}$	D1136	Disassembler, instructions op-code.	Lab 5. LCD-Display.
C3	Wednesday	Oct. 9	$08^{15} – 12^{00}$	D1136	*Introduction to C-programming language. Lars Karlsson.* ***Introduction to lab6.***	
C4	Tuesday	Oct. 15	$10^{15} – 12^{00}$	D1136	*Introduction to C-programming language. Lars Karlsson.*	Lab 6. CyberTech Wall
F10	Wednesday	Oct. 16	$08^{15} – 12^{00}$	D1136	Addressing modes, program examples.	Display and C-programming.
F11	Tuesday	Oct. 22	$10^{15} – 12^{00}$	D1136	Calculations with multiply, program examples.	
F12	Wednesday	Oct. 23	$08^{15} – 12^{00}$	D1136	Repetition and program examples.	
	Monday	Oct. 28	$08^{00} – 13^{00}$		**Written exam.**	

Manuals and free on-line books:

1) **doc2466_ATmega16.pdf** - 8-bit Atmel Microcontroller with 4K/128K/256K Bytes In-System Programmable Flash
2) **Instruction set.pdf** – ATMEL 8-bit AVR Instruction Set
3) **doc1022_AVR_Assembler_user_guide.pdf** - AVR Assembler User Guide
4) **JHD202C_display_2x20.pdf**
5) **Beginners Introduction to the Assembly Language of ATMEL-AVR-Microprocessors** (English, Free on-line book), *www.**avr-asm**-download.de/**beginner**_en.pdf*

Text books:

1) **Programming and Interfacing ATMEL's AVRs, 1st Edtion, chapter 2, page 29 – 166** (English))
2) **Mikroprocessorteknik, Per Foyer, Studentlitteratur. ISBN 91-44-03876-3** (Swedish)