

EEC120 Teaching/Evaluation Plan

Plan for EEC120 Computer Programming I

Week	Lecture	Laboratory	Notes
Week 01	• Course Introduction • Introduction to Computer Systems 1. Hardware (CPU, input, output) 2. Software (Kernel, OS, userspace) 3. Numbers & Logic • Introduction to Computer Programming 1. Algorithms: instruction sequencing 2. Flow-charts: visual representation 3. Interpreters ⇒ scripts 4. Compiler and Linkers ⇒ binary executables	• Tools (compiler/IDE) Installation/Setup	• [VIDEO GUIDE]???
Week 02	• Introduction to C language 1. Basic code structure (syntax) 2. Function and code-block 3. Simple text display • Creating first executable binary 1. Syntax (language) and semantic (decision logic) errors 2. Simple debugging	• Explore building binary from c source code • Explore creating text decorations using symbols	• [VIDEO GUIDE]???

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Week 03	- C Variables (data storage) - data types and sizes - C Operators - arithmetic and logic - boolean vs bitwise - Data processing - equations and tasks	- Understanding storage types and practical use - Exploring code that does equations/calculations	Assignment 1 Queue
Week 04	- Flow control: Branches (selection) - if-else structure - switch-case structure (optional) the ?: combo	- Understanding decision making process in code - Exploring code that control program flow	
Week 05			Assignment 1 Due (5%)
Week 06	- Simple Applications - traffic light control - temperature control - input signal detection/measurement	Lab Work 3 [DEVELOPMENT WORK] - practical programming: - detect edges - measure pulse width - measure frequency - generate pwm (single/periodic)	Lab Assessment 1 (10%)
Week 07	- Hardware Platform 2 (Lecture Part 4) - Board (GTUC51B001) specifications - Microcontroller (NXP P89V51RD2) details	Lab Work 3 (cont.) [DEVELOPMENT WORK] - system integration	Mid-term Examination (20%)
Week 08	- Hardware Platform 2 (cont.) (Lecture Part 4) - Features: I/O, Timer, Interrupt	Lab Work 3 (cont.) [DEVELOPMENT WORK] - system integration	Assignment 2 Queue

Week	Lecture	Laboratory	Notes
Week 09	- Embedded OS on Raspberry Pi - running Raspbian Linux - basic I/O access	- Lab Work 4 [PREPARATION WORK] - prepare raspbian (pgt302pi image) - change hostname (make unique) [DEVELOPMENT WORK] - my1linuxpi: gpio	
Week 10	- Embedded OS on Raspberry Pi - running Raspbian Linux - basic peripheral interface	- Lab Work 4 (cont.) [PREPARATION WORK] - make sure avahi/mdns is running on pi - make sure bonjour/avahi/mdns is available on host [DEVELOPMENT WORK] - remote access using putty - my1codelib: run custom server - my1linuxpi: run gpio http server	Assignment 2 Due (5%)
Week 11	- Setup/running simple data server - server side programming (C @ PHP)	Lab Project	Lab Assessment 2 (10%)
Week 12	- Setup/running simple data server - client side programming (C @ HTML/CSS/JAVASCRIPT)	Lab Project (cont.)	
Week 13	- Practical Applications - requirements and considerations	Lab Project (cont.)	
Week 14	- Practical Applications (cont.) - requirements and considerations	Lab Project (cont.)	Lab Project Due (10%)

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