Agni College of Technology
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OMR, Thalambur, Chennai - 600130, www.act.edu.in

VENDORS NAME: ABE SEMICONDUCTOR

CLASS: III ECE (5th SEM)

SUBJECT: AURDINO/ RASPBERRYPI TRAINING

Syllabus for Each Modules:

Module 1: Embedded System Design Using ARM

CPU's Used : ARM -7TDMI S Core-LPC2148,LPC2129 Boards.

Topics Covered :

1. ARM Core Instruction and Instruction Level programming.
2. I/O Programming in ARM (LCD, LED, MOTORS, Keypads)
3. Sensor Interfacing (ADC,DAC)
4. UART Interfacing with Wireless Transceivers(**Xbee** Protocols, GSM.GPS)
5. Timers, PWM,PLL ,Interrupt Internal Programming
6. Communication Protocols Interfacing using SPI,I2C,USB
7. Mini-Project Execution.

Module 2: Embedded System Design Using RTOS for ARM

CPU's Used: ARM -7TDMI S Core-LPC2148,LPC2129 Boards. RTOS Use : Free RTOS, ucos-III

Topics Covered: (PART-1 For ARM Programming)

1. ARM Core Instruction and Instruction Level programming.
2. I/O Programming in ARM (LCD, LED, MOTORS, Keypads)
3. Sensor Interfacing (ADC,DAC)
4. UART Interfacing with Wireless Transceivers(Xbee Protocols, GSM.GPS)
5. Timers, PWM,PLL Internal Programming
6. Communication Protocols Interfacing using SPI,I2C,USB
7. Mini-Project Execution using ARM

PART-II(RTOS for ARM Programming)

1. Introduction to RTOS Environment For Embedded Programming
2. Task Creation Programming for LPC2148 boards
3. IPC for the LPC2148 Boards.
4. Multi-Threaded Applications in ARM boards.
5. Interrupt Handling in RTOS for Lpc2148 Boards.
6. Porting Of RTOS in ARM Boards.
7. Mini-project Execution

Module 3: Embedded Linux Design for ARM

AIM : To train the students in the areas of Embedded Linux programming Using ARM Boards

CPU 's Used : ARM -9TDMI S Core-S3C2440 Boards.

Topics Covered :

1. Introduction to Embedded Linux and Shell Programming.
2. Developing Embedded C Programming in Linux Environment
3. Cross-Compilers
4. U-Boot-Boot loaders
5. Root File Systems-JFFS2 X-Compilation
6. Kernel Compilation
7. Developing Device Drivers for 2440 Boards in Embedded Linux
8. Porting Embedded Linux on ARM
9. Mini-project Execution.