Short Term Courses – NIELIT Delhi Centre

Embedded System using 8051 and AVR/With Project

Objective of the Course:

This short term course aims to make students aware of the idea of embedded system, basic evaluation, implementation and designing of embedded system.

Learning Outcomes:

Upon completion of the course, the students would be able to develop AVR program, describe different AVR microcontroller blocks including advanced functions, discuss different types of displays for microcontroller applications, read through a refresher on C programming and an introduction to I/O on AVR microcontrollers, learn how to use the AVR Studio user interface to control program execution and to simulate I/O.

Duration of the Course: 60/80(with project) hours

Minimum Eligibility Criteria and Prerequisite, if any:

Pursuing/Passed B.E./B. Tech /BCA/MCA/BSc./MSc.(IT/CS/Electronics) or Graduate (any stream) with PG Diploma (CA/CS/IT)/NIELIT A/B Level /NIELIT CHM-A Level or pursuing AICTE Approved three years diploma in Electronics /Electrical/Computers/Instrumentation or Equivalent.

Outline of Course:

S. No	Topic	Hours
1.	Introduction to Computing	4 hrs
2.	Embedded System and its Types	7 hrs
3.	Architecture of 8051	8 hrs
4.	Introduction to AVR Microcontroller	6 hrs
5.	AVR Architecture and Assembly Language Programming	7 hrs
6.	AVR I/O Port Programming	8 hrs
7.	Arithmetic , Logic Instruction and Programs	8 hrs
8.	AVR Interrupt and Timer Programming	6 hrs
9.	Interfacing With AVR	6 hrs
	Theory / Lecture Hours:	30 hrs
	Practical / Tutorial / Lecture Hours:	30 hrs
	Total Hours:	60 hrs
	Total Hours With Project:	80 hrs

Books Recommended for Reading and Reference:

1) Muhammad Ali Mazidi - *AVR Microcontroller and Embedded Systems: Using Assembly and C*, Pearson Education.
2) Dhananjay Gadre - *Programming and Customizing the AVR Microcontroller*, McGraw-Hill, 2000.
3) The 8051 Microcontroller and Embedded Systems- Muhammad Ali Mazidi, Janice Gillispie Mazid