

Weekly Lecture Schedule

Microcontroller based system design (DIC E01P)

Autumn 2015

Note: The course is purely lab based. The duration of the below mentioned lectures could vary from 30 minutes to 90 min. Each lecture could be followed by some hands on practice with hardware and software (To be conducted under the supervision of Design Fellow of DIC@IUST).

Month	Week	Topic/Title	Coordinator/Instructor
August	Week 4 L1	Introduction to DIC and its broad objectives. Product Design. Mechatronics.	Dr. Majid Koul
	Week 4 L2	Brush-up on microprocessor and microcontrollers. Interfacing of 8051/31 microcontroller with external memory, Interfacing of A/D, and D/A converters with 8051 microcontrollers.	Dr. Faroze Ahmed
September	Week 1 L1	Introduction to Arduino, ATME1, PIC microcontrollers, Raspberry PI.	Dr. Majid Koul
	Week 1 L2	(Assignment of major projects to DIC-E01P students.)	DIC Team
	Week 2 (NAAC Visit)	An overview of robotics and haptics.	Dr. Majid Koul
	Week 2 L2	Application of embedded systems in mechatronics systems and product design.	
	Week 3 L1	Introduction to FPGA. Programming FPGA using VHDL. Parallel port programming on Altera FPGA.	Dr. Majid Koul
	Week 3 L2	Control system design and challenges in implementation.	Dr. Shahkar Nahvi
	Week 4 L1	Microcontroller Programming through C.	Mr. Kaiser Giri
	Week 4 L2	Addressing. Interfacing of stepper motor with 8051 microcontrollers, port expansion of 8051, interfacing of different devices through 8155 and 8255 with 8051, interrupt control interfacing.	Dr. Faroze Ahmed
October	Week 1 L1	Control System design on FPGA.	Dr. Majid Koul
	Week 1 L2	Application of embedded systems in food industry (product design)	Dr. Basharat Nabi
	Week 2 L1	Microprocessor programming with hands on practice	Mr. Kaiser Giri
	Week 2 L2	Expert lecture	TBD
	Week 3	Design Thinking Workshop	DIC Team, DIC Fellow, DIC-E01P Students
	Week 4 L1	Pre-final presentations of major project	DIC Team to review
	Week 4 L2	Expert Lecture	TBD.
November	Week 1	Major project work begins	Dr. Majid Koul, Dr. Faroze Ahmad, Mr. Kaiser Giri
	Week 2	State/University level awareness about embedded systems (2 days workshop)	DIC fellow and DIC-E01P students
	Week 3	Dedicated major project work	DIC Fellow
	Week 4	Dedicated major project work	DIC Fellow
December	Week 1	Project presentations	DIC Team

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