Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
CPEL8032	Elective-III Embedded Systems Lab	--	--	2	--	--	1	1
		Examination Scheme						
		ISE		ESE				Total
				Practical		Oral		
		40		-		20		60

Pre-requisite Course Codes		CPE8032(Embedded Systems)
At end of successful completion of this course, student will be able to		
Course Outcomes	CO1	Design microcontroller based embedded systems for various applications.
	CO2	Produce efficient code for embedded systems
	CO3	Define the properties of a real-time operating system.
	CO4	Develop drivers for external peripheral devices as per requirement.

Exp. No.	Experiment Details	Ref.	Marks
1	Tostudy the In-Circuit Emulator (ICE) and In-Circuit Debugger (ICD) troubleshooting tools.	1,2	5
2	Interfacing of LCD module with ARM Processors.	2,3	5
3	Program to interface stepper motor.		5
4	To develop Device Driver (Drivers for CAN, Drivers for USB, Drivers for Ethernet).	2,4	5
5	To study Real Time Operating System (RTOS).	2,3	5
6	Converting existing Windows and Linux as RTOS by configuring QNX Neutrino (using Virtual Machine).	1,4	5
7	Implement a semaphore for any given task switching using RTOS on microcontroller board.	2,5	5
8	Program for exploration of (process creation, Thread creation)using Embedded Real Time Linux.	5,6	5
		Total Marks	40

References:

[1] Dr. K.V.K.K. Prasad, "Embedded /Real-Time System: Concepts, Design & Programming", Dreamtech, Edition 2010.

[2]. Andrew. N. Sloss, DomnicSymes, Chris Wright, "ARM System Developer's Guide", Elsevier, edition 2004.

[3]. KarimYaghmour , "Building Embedded Linux Systems", 2003 O'Reilly & Associates, 2. Rajkamal, "Embedded Sytems ", TMH.

[4]. David Simon, "Embedded systems software primer", Pearson .

[5]. Steve Furber, "ARM System-on-Chip Architecture", Pearson.

[6]. Iyer,Gupta, "Embedded real systems Programming", TMH.