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
EXC8041	Robotics	--	--	2	--	--	1	1
		Examination Scheme						
		ISE		ESE				Total
				Practical		Oral		
		40		--		20		60

Pre-requisite Course Codes		EXC8041 (Robotics)
After successful completion of the course, student will be able to		
Course Outcomes	CO1	Develop inverse and direct kinematics algorithm for robotic arm manipulation using suitable platform
	CO2	Differentiate the performance of motion planning algorithms
	CO3	Develop image processing algorithm for robotic arm manipulation
	CO4	Operate the robotic arm manipulator and verify its specifications
	CO5	Perform in a team to execute a given robotic task

Exp. No.	Experiment Details	Ref.	Marks
1	Generation of PWM Signal for motor control	1	05
2	Digital control algorithm for self-balance ROBOT	1	05
3	Simulation of CTM in MATLAB	2	05
4	Implement Bug 0 Algorithm	2,3	05
5	Implement Bug 2 Algorithm	2,3	05
6	Control Algorithm 6 DOF Robot	1	05
7	Thresholding, Histogram and Edge detection of Digital Image	2	05
8	Position control of DC motor using NI Elvis	1	05
		Total Marks	40

References:

[1] LabVIEW & myRIO user manual

[2] www.mathworks.com

[3] Howie Choset, Kevin M. Lynch, Seth Hutchinson, George Kantor, Wolfram Burgard, Lydia E. Kavraki and Sebastian Thrun, "Principles of Robot Motion – Theory, Algorithms and Implementations", Prentice-Hall of India, 2005.