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
ESL23	Workshop II	--	--	2	--	--	1	1
		Examination Scheme						
		ISE		ESE				Total
		50		-				50

Course Objective:

The objective is to develop technical life skill sets. This exercise also aims in inculcating respect for physical work and hard labor in addition to some amount of value addition by getting exposed to interdisciplinary engineering domains.

Trade No.	Topics	Ref.	Hrs.
1	**Sheet Metal Practice** • Introduction to primary technology processes involving bending, punching and drawing various sheet metal joints, development of joints. • Term work to include a utility job in sheet metal.	1	8
2	**PCB Laboratory Exercises** • Layout drawing, Positive and negative film making, PCB etching and drilling, Tinning and soldering technique.	5	8
3	**Introduction to Electronic Components** • Exposure to usual electronic equipment/instruments such as Multi-meter, Oscilloscope, Function generator, IC tester and Power supply, Information about their front panels, Demonstrations on their working, Hands-on for measurement of component values and DC voltage using multi-meter, AC mains voltage/ 1 KHz Square wave/any small signal from function generator on Oscilloscope, Testing of sample digital ICs using IC tester. **OR** **Repairing of gadgets and appliances:** • Elementary skills of repairing juicer, mixer, grinder, etc.	5	8
4	**3D Printing** • Importing the *.stl* file to generate a *.gcode* for 3D printing through the use of open source softwares like *Cura,* etc.	4	4

References:

1. P. Kannaiah; K. L. Narayana, *Workshop Manual*, Scitech Publishers
2. Venkat Reddy, *Workshop Manual*, BS Publication
3. Sham Tickoo, *AutoCAD 2017*, Dreamtech Press
4. Think3D reference manual
5. Khandpur R.S., *Printed Circuit Boards*, Tata McGraw Hill, 2005.
6. Simon Monk, *Make Your Own PCBs with EAGLE: From Schematic Designs to Finished Boards* McGrawHill publication.
7. Charles Platt, *Encyclopedia of Electronic Components* O′Reilly; 1 edition.

ISE Distribution	Marks
Carpentry	10
PCB Laboratory Exercises	10
Introduction to Electronic Components OR Repairing of appliances	10
3D printing	10
Journal / Quiz	10