

20IF301P					Industry 4.0 Laboratory					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
0	0	2	1	2	--	--	--	50	50	100

COURSE OBJECTIVES

1. To comprehend the concept and significance of Industry 4.0
2. To understand core elements and technologies of Industry 4.0 through simulation and experimental studies
3. To explore different software packages and hardware elements involved in realization of Industry 4.0

List of Experiments

1. Basic computations using Python programming.
2. Use simulations to understand the performance/behavior of a system by (i) creating a computational environment that mimics the real world, (ii) generating (synthetic) or loading data from sources, and (iii) testing the hypothesis
3. Introduction to MATLAB programming and SIMULINK
4. 3D printing of Airfoil through rapid prototyping 3D printer
5. Dynamic simulation of drone (unmanned air vehicle) through MATLAB/SIMULINK
6. ANSYS simulation of bending of a beam in an earthquake resist-building
7. Introduction to Arduino Embedded platform.
8. Design of line follower autonomous vehicle.
9. Design of smart meter for recording the electricity consumption
10. Design of smart lighting with the help of proximity sensors.

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 – Understand the concept of Industry 4.0 and its significance
 CO2 – Understand the resource requirements for the implementation of Industry 4.0
 CO3 – Learn the Simulation Packages for Industry 4.0
 CO4 – Explore the concept of Smart Infrastructure through simulation studies
 CO5 – Inspect embedded platform applications for Industry 4.0
 CO6 – Synthesise the solution for the given Industry 4.0 related problem

END SEMESTER LABORATORY EXAMINATION PATTERN**Max. Marks: 100**

Continuous evaluation

50 marks

End semester examination and Viva-voce

50 marks