B.Tech 7th Semester (Mechanical Engineering)

Lesson Plan: Automation in Manufacturing (PCC-ME-701/21)

Sr No.	Course Plan	Course covered	Remarks (if any)
Chapter: 1 Introduction to Automation			
1	Automation in Production System, Principles and Strategies of Automation,	L1	
2	Basic Elements of an Automated System, Advanced Automation Functions,	L2	
3	Levels of Automations	L3	
4	Introduction to automation productivity	L4	
Chapter: 2 industry 4.0 and its components			
5	Introduction to Industry 4.0	L5	
6	its components: features	L6	
7	Working, Advantages and applications	L7	
8	Programmable logic controllers and its working	L8	
9	Programming IoT	L9	
10	PLC components	L10	
11	PLC and its role in automation	L11	
Chapter: 3 Overview of Material Handling Systems			
12	Rotary feeders.	L12	
13	oscillating force feeder,	L13	
14	Vibratory feeder,	L14	
15	Elevator type and Centrifugal type feeders,	L15	
16	Principles and Design Consideration-1,	L16	
17	Material Transport Systems, Storage Systems	L17	
18	Principles and Design Consideration,	L18	
19	Material Transport Systems	L19	
20	Storage Systems	L20	
Chapter: 4 Automated Manufacturing devices			
21	Automated Manufacturing devices: Component s,	L21	
22	Classification and Overview of pneumatic	L22	
23	Hydraulic systems.	L23	

24	Actuators and Valves	L24	
25	Electric Control devices	L25	
Chapter: 5 Sensors and Controllers			
26	Industrial Control Systems	L26	
27	Process Industries Verses Discrete - Manufacturing,	L27	
28	Industries Continuous Verses Discrete Control,	L28	
28	Computer Control Process	L29	
30	Computer Control Process and its Forms.	L30	
31	Sensors	L31	
32	Types of Sensors	L32	
33	Actuators	L33	
34	Control System Components	L34	
35	Types Control System Components	L35	
Chapter: 6 Artificial intelligence and applications			
36	Artificial intelligence and applications	L36	
37	Introduction, Need for Machine Learning,	L37	
38	Tools and Applications of AI in Mechanical Engineering	L38	
39	Comparison analysis of results using AI,	L39	
40	Robots and application of AI in robotics.	L40	
41	Case studies on use of AI using research papers	L41	
42	Case studies on use of AI using research papers	L42	