

PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY
PANIPAT
Department of Mechanical Engineering
LESSON PLAN

Name: - Mr.Gourve Goyal

Subject Name: - Automation in Manufacturing

Branch/Semester: -7th. SEM

Subject Code:-ME-401A

S.No.	Lecture No.	Topics to be covered	Tentative Date
1.	L-1	UNIT- I Introduction:-Production System	13/09/2021
2.	L-2	Automation in production system	15/09/2021
3.	L-3	Manual labour in production system, automation principle and strategies	17/09/2021
4.	L-4	manufacturing industries and products, manufacturing operations	20/09/2021
5.	L-5	product/ production relationship, basic elements of an automation system	22/09/2021
6.	L-6	advance automation function, level of automation.	24/09/2021
7.	L-7	Industrial robotics:- Robot anatomy and related attributes, joint and links,	27/09/2021
8.	L-8	common robot configuration	29/09/2021
9.	L-9	Joint drive system, sensors in robotics	1/10/2021
10.	L-10	Robot control system, end effectors, grippers and tools, applications of industrial robots	4/10/21
11.	L-11	Material handling, processing operation, assembly and inspection, robot programming	6/10/21
12.	L-12	UNIT-II Group technology and cellular manufacturing: Part families, parts classifications and coding	8/10/2021
13.	L-13	Production flow analysis, cellular Manufacturing- composite part concept	11/10/2021
14.	L-14	Machine cell design, applications of group technology	18/10/2021
15.	L-15	Grouping parts and machines by rank order clustering technique	20/10/2021

16.	L-16	Arranging machines in a G.T. cell	22/10/2021
17.	L-17	Flexible manufacturing: Introduction, FMS components	25/10/2021
18.	L-18	Flexibility in manufacturing – machine, product	27/10/2021
19.	L-19	Routing, operation, types of FMS	29/10/2021
20.	L-20	FMS layouts, FMS planning and control issues	3/11/2021
21.	L-21	Deadlock in FMS, FMS benefits and applications	8/11/2021
22.	L-22	Revision	10/11/2021
23.	L-23	Unit III- Process planning: Introduction, manual process planning	12/11/2021
24.	L-24	Computer aided process planning – variant, generative	24/11/2021
25.	L-25	Decision logic decision tables	26/11/2021
26.	L-26	Decision trees, Introduction to artificial intelligence	29/11/2021
27.	L-27	Shop floor control: Introduction, shop floor control features	1/12/2021
28.	L-28	Major displays, major reports, phases of SFC, order release	3/12/2021
29.	L-29	Order scheduling, order progress, manufacturing control	6/12/2021
30.	L-30	Methodology, applications, shop floor data collections	8/12/2021
31.	L-31	Types of data collection system, data input techniques, automatic data, collection system	10/12/2021
32.	L-32	Unit 4 :- CNC basics and part programming: Introduction, historical, background, basic components of an NC	13/12/2021
33.	L-33	Steps in NC, verifications of numerical control machine tool programs	15/12/2021
34.	L-34	Classification of NC Machine tool, basics of motion control and feedback for NC M/C	17/12/2021
35.	L-35	NC part programming, part programming methods	20/12/2021
36.	L-36	Modern machining system, automatically programmed tools	22/12/2021

37.	L-37	DNC, adaptive control	24/12/2021
38.	L-38	Automated guided vehicle and storage system: Functions of AGV, types of AGV	27/12/2021
39.	L-39	safety consideration for AGV, design of AGV	27/12/2021(Extra lecture)
40.	L-40	Introduction to storage system, storage system performance, storage location strategies, conventional storage method and equipment	29/12/2021
41.	L-41	automated storage system, fixed aisle automated storage/ retrieval system, carousel storage systems	31/12/2022
42.	L-42	analysis of storage system, fixed aisle automated storage/ retrieval systems, carousel storage systems	31/01/2022(Extra lecture)

Course Incharge

(Gourve Goyal)