LESSON PLAN

Subject Name- Principles of Machine Tools	Branch- Production Engineering
Subject Code- BPE06002	Semester- 6th

S/N	Module	Topic(s)	Period/ Hours
1.	I	**Introduction**, Syllabus Overview and Approaches to the Subject.	1
2.	I	Classification of machine tools, Working and auxiliary motions.	2
3.	I	Hydraulics and Mechanical transmission and their elements, General requirement of machine tools.	3
4.	I	Mechanical transmission and its elements.	4
5.	II	**Kinematics of Machine Tools:** Basic consideration in design of drives.	5
6.	II	Graphical representation of speed, structure diagram.	6-7
7.	II	Selection of optimum ray diagram.	8
8.	II	Design of speed and feed gearboxes.	9-10
9.	II	Step-less regulation of speed and feed rates.	11
10.	III	**Machine Tool Structure:** Design criteria, materials, basic design procedure,	12-13
11.	III	Static and dynamic stiffness	14
12.	III	Design of beds.	15
13.	III	Design of Columns.	16
14.	III	Model technique in design of machine structures.	17-18
15.	IV	**Guide ways:** Classification of guide ways, Material and lubrication.	19
16.	IV	Design criteria and calculation of slide ways	20-21

S/N	Module	Topic(s)	Period/ Hours
17.	IV	Hydrostatic and Aerostatic sideways	22-23
18.	IV	Antifriction guide ways, combination guide ways.	24
19.	IV	**Power screws:** classification	25
20.	IV	Design principle of power screw, Elimination of backlash.	26-27
21.	IV	Tutorial	28-29
22.	V	**Control system in Machine Tools:** Classification.	30
23.	V	Control in changing speeds and feeds.	31-32
24.	V	Ergonomic considerations applied to design of control members.	33-34
25.	V	Principle of automatic and adaptive control.	35
26.	V	Tutorial	36

Signature of the teacher