LESSON PLAN

Subject Name- Manufacturing & Design of Composites	Branch- Production Engineering
Subject Code- BPEPE602	Semester- 7th, B.Tech

S/N	Module	Topic(s)	Period/ Hours
1	I	Introduction to composite materials, Matrix material, Reinforcement and interfaces,	1
2.	I	Classification: Polymer Matrix Composites, Properties and performance of composites, Applications.	2
3.	I	Metal Matrix Composites, Properties and performance of composites, Applications.	3
4.	I	Ceramic Matrix Composites, Properties and performance of composites, Applications.	4
5.	I	Hybrid Composites,	5
6.	I	Nano composites,	6
7.	II	Processing of FRP Composites	7
8.	II	Processing of FRP Composites: Contact Moulding process,	8-9
9.	II	Processing of FRP Composites: compression moulding processes,	10-11
10.		Processing of FRP Composites: compression moulding processes,	12-13
11.	II	Processing of FRP Composites: Filament winding process	14-15
12.	II	Processing of FRP Composites: Filament winding process	16-17
13.	III	Micromechanical Analysis of Composite strength and stiffness: volume fractions	18-19
14.	III	Micromechanical Analysis of Composite strength and stiffness: volume fractions	20
15.	III	Micromechanical Analysis of Composite strength and stiffness: weight fractions	21

S/N	Module	Topic(s)	Period/ Hours
16.	**III**	longitudinal strength and stiffness	22
17.	**III**	transverse modulus,	23-24
18.	**III**	inplane shear modulus, Poission's ratio	25
19.	**IV**	Macromechanical Behaviour: Stress strain relations of anisotropic materials	26
20.	**IV**	Macromechanical Behaviour: Stress strain relations of anisotropic materials	27
21.	**IV**	Engineering constants for isotropic materials-Plano stress condition-Stress-strain relations for a lamina of arbitrary orientation	28
22.	**IV**	Engineering constants for orthotropic materials	29-30
23.	**IV**	Plano stress condition-Stress-strain relations for a lamina of arbitrary orientation	31
24.	**IV**	strength of an orthotropic lamina	32
25.	**V**	Analysis of laminated composites: Laminates, stress-strain relations, equilibrium equations, laminate stiffness	33
26.	**V**	Analysis of laminated composites: Laminates, stress-strain relations, equilibrium equations, laminate stiffness	34
27.	**V**	Analysis of laminated composites: Laminates, stress-strain relations, equilibrium equations, laminate stiffness	35
28.	**V**	Analysis of laminated composites: Laminates, stress-strain relations, equilibrium equations, laminate stiffness	36
29.	**V**	Analysis of laminated composites	37
30.	**V**	Analysis of laminated composites: classical lamination plate theory	38-40