

## Lesson Planning

Name of Faculty

**Dimple Rani**

Designation

**Lecturer**

Discipline

**: Mechanical Engg.**

Subject

**: Workshop Technology-III**

Lesson Plan duration

**: 48 Hours Work load (Lecture/Practical) per**

Week	Theory		Teacher sign	HOD sign
	Lecture day	Topic(Including assignment/test)		
1		<b>UNIT - 01 Milling</b>		
	1	Specification and working principle of milling machine		
	2	Classification, brief description and applications of milling machine		
2	3	Main parts of column and knee type milling machine		
	4	Milling machine accessories and attachment – Arbors, adaptors, collets, vices, circular table, indexing head and tail stock, vertical milling attachment		
	5	Milling methods - up milling and down milling		
3	6	Identification of different milling cutters and work mandrels, Work holding devices		
	7	Milling operations – face milling, angular milling, form milling, straddle milling and gang milling.		
	8	Cutting parameters		
4	9	Indexing on dividing heads, plain and universal dividing heads.		
	10	Indexing methods: direct, Plain or simple, compound, differential and angular indexing, numerical problems on indexing.		
	11	<b>Assignment-I</b>		
5	12	Revision		
		<b>UNIT-02 Grinding</b>		
	13	Purpose of grinding		
6	14	Various elements of grinding wheel – Abrasive, Grade, structure, Bond		
	15	Common wheel shapes and types of wheel – built up wheels, mounted wheels and diamond wheels. Specification of grinding wheels as per BIS.		
7	16	<b>Sessional-I</b>		
	17	Truing, dressing, balancing and mounting of wheel.		
	18	<b>PTM</b>		
8	19	Grinding methods – Surface grinding, cylindrical grinding and centreless grinding.		
	20	Grinding machine – Cylindrical grinder, surface grinder,		
	21	internal grinder, centreless grinder,		

8	22	tool and cutter grinder.		
	23	Selection of grinding wheel		
	24	Revision		
9		<b>UNIT-03 Gear Manufacturing and Finishing Processes</b>		
	25	Gear hobbing		
	26	Gear shaping		
		<b>Assignment-II</b>		
		<b>UNIT-04 Modern Machining Processes</b>		
10	27	Mechanical Process - Ultrasonic machining (USM): Introduction, principle, process, advantages and limitations, applications		
	28	Electro Chemical Processes - Electro chemical machining (ECM) – Fundamental principle, process, applications,		
	29	Electro chemical Grinding (ECG) – Fundamental principle, process, application		
11	30	<b>Sessional-II</b>		
	31	Electrical Discharge Machining (EDM) - Introduction, basic EDM circuit, Principle, metal removing rate, dielectric fluid, applications		
	32	Laser beam machining (LBM) – Introduction, machining process and applications		
12	33	<b>PTM</b>		
	34	Electro beam machining (EBM)- Introduction, principle, process and applications		
		<b>UNIT-05 Metallic Coating Processes</b>		
	35	Metal spraying – Wire process, powder process, applications		
13	36	Powder coating		
		<b>UNIT-06 Metal Finishing Processes</b>		
	37	Purpose of finishing surfaces		
	38	<b>Assignment-III</b>		
14	39	Surface roughness-Definition and units		
	40	Honing Process, its applications		
	41	Description of hones		
15	42	Brief idea of honing machines		
	43	Lapping process, its applications		
	44	Description of lapping compounds and tools		
16	45	Brief idea of lapping machines.		
	46	Super finishing process, its applications,Polishing, Buffing		
	47	Revision		
	48	Revision		

**week (in hours):**