

Lesson Plan

Name of the Faculty : Sh. Subhash Chander
 Discipline : Mechanical Engineering
 Semester : 5th
 Subject : Workshop Technology-III
 Lesson Plan duration : 17 weeks (15.09.2022 to 16.01.2023)
 Work load per week : Lecture – 03, Practical- 00

Week	Theory		EXECUTION	
	Lecture Day	Topic (Including assessment/test)	Date	Sign.
1 st	1 st	Introduction about the subject and brief overview.		
	2 nd	1. Milling: 1.1 Specification and working principle of milling machine		
	3 rd	1.2 Classification, brief description and applications of milling machine		
2 nd	4 th	1.3 Details of column and knee type milling machine		
	5 th	1.4 Milling machine accessories and attachment – Arbors, adaptors, collets, vices,		
	6 th	1.4 circular table, indexing head and tail stock, vertical milling attachment, rotary table		
3 rd	7 th	1.5 Milling methods - up milling and down milling		
	8 th	1.6 Identification of different milling cutters and work mandrels		
	9 th	1.7 Work holding devices		
4 th	10 th	1.8 Milling operations – face milling, angular milling, form milling, straddle milling and gang milling		
	11 th	1.9 Cutting speed and feed, Simple numerical problems. 1.10 Thread milling		

	12 th	2. Gear Manufacturing And finishing Processes: 2.1 Gear Hobbing		
5 th	13 th	2.2 Gear Shaping		
	14 th	2.3 Gear Finishing processes		
	15 th	3. Grinding: 3.1 Purpose of grinding, 3.2 Various elements of grinding wheel – Abrasive, Grade, structure, Bond		
6 th	16 th	3.3 Common wheel shapes and types of wheel – built up wheels, mounted wheels and diamond wheels.		
	17 th	3.3 Specification of grinding wheels as per BIS		
	18 th	3.4 Truing, dressing, balancing and mounting of wheel		
7 th	19 th	1st Sessional test (Tentative)		
	20 th	Assessment		
	21 st	3.5 Grinding methods – Surface grinding, cylindrical grinding and centerless grinding.		
8 th	22 nd	3.6 Grinding machine – Cylindrical grinder, surface grinder, internal grinder, centerless grinder, Tool and cutter grinder.		
	23 rd	3.7 Selection of grinding wheel		
	24 th	3.8 Thread Grinding		
9 th	25 th	4. Modern Machining Processes 4.1 Mechanical Process - Ultrasonic machining (USM): Introduction, principle, process, Advantages and limitations, applications.		
	26 th	4.2 Electro Chemical Processes - Electro chemical machining (ECM) – Fundamental principle, process, applications		
	27 th	4.3 Electrical Discharge Machining (EDM) - Introduction, basic EDM circuit, Principle		
10 th	28 th	4.3 Electrical Discharge Machining (EDM) - Introduction, basic EDM circuit, Principle		
	29 th	4.3 Metal removing rate, dielectric fluid, applications		
	30 th	4.4 Laser beam machining (LBM) – Introduction, machining process and applications		

11 th	31 st	4.4 Laser beam machining (LBM) – Introduction, machining process and applications		
	32 nd	4.5 Plasma Arc Machining and Welding – Introduction, principle, process, applications		
	33 rd	4.5 Plasma Arc Machining and Welding – Introduction, principle, process, applications		
12 th	34 th	2nd Sessional test (Tentative)		
	35 th	Assessment		
	36 th	5. Metallic Coating Processes 5.1 Metal spraying - Wire process, Powder coating process, applications		
13 th	37 th	5.2 Electro plating, Anodizing & galvanizing,		
	38 th	5.3 Organic Coatings- oil base paint, rubber base coating		
	39 th	6. Metal Finishing Processes 6.1 Purpose of finishing surfaces. 6.2 Surface roughness-Definition and units		
14 th	40 th	6.3 Honing Process, its applications. 6.4 Description of hones.		
	41 st	6.5 Brief idea of honing machines.		
	42 nd	6.6 Lapping process, its applications.		
15 th	43 rd	6.7 Description of lapping compounds and tools.		
	44 th	6.8 Brief idea of lapping machines.		
	45 th	6.9 Polishing. 6.10 Buffing. 6.11 Burnishing		
16 th	46 th	3rd Sessional test (Tentative)		
	47 th	Assessment		
	48 th	Revision		
17 th	49 th	Revision		
	50 th	Revision		
	51 st	Revision		