Lesson Planning

Name of Faculty :Ms. Kiran Bala
Dicipline : Mechanical Engg.
Subject : Workshop Technology-III
Lesson Plan duration : 48 Hours
Work load (Lecture/Practical) per week (in hours): 3L/week

Week	Theory		Remarks
	Lecture day	Topic(Including assignment/test)	
1		**UNIT-01, Gear Manufacturing**	
	1	Gear materials and specifications,	
	2	Gear manufacturing by Casting, Moulding,Stamping,	
	3	Machining; Gear generating methods: Gear Shaping with pinion cutter	
2	4	& rack cutter;	
	5	Gear hobbing; Description of gear hob;	
	6	Operation of gear hobbing machine; Gear finishing processes;	
3		**UNIT-02 Grinding**	
	7	Purpose of grinding	
	8	Various elements of grinding wheel – Abrasive, Grade, structure, Bond	
	9	Common wheel shapes and types of wheel – built up wheels, mounted wheels and diamond wheels. Specification of grinding wheels as per BIS.	
4	10	**Sessional-I**	
	11	Truing, dressing, balancing and mounting of wheel.	
	12	Grinding methods – Surface grinding, cylindrical grinding and centreless grinding.	
5	13	Grinding machine – Cylindrical grinder, surface grinder,	
	14	internal grinder, centreless grinder,	
	15	tool and cutter grinder.	
6	16	Selection of grinding wheel	
	17	Revision	
	18	Revision	
7		**UNIT-03 Modern Machining Processes**	
	19	Mechanical Process - Ultrasonic machining (USM): Introduction, principle, process,	
	20	advantages and limitations, applications	
	21	Electro Chemical Processes - Electro chemical machining (ECM)	
6	22	Fundamental principle, process, applications,	
	23	Electro chemical Grinding (ECG) – Fundamental principle, process, application	
	24	**Sessional-II**	
9	25	Electrical Discharge Machining (EDM) - Introduction, basic EDM circuit, Principle, metal removing rate, dielectric fluid, applications	
	26	Laser beam machining (LBM) – Introduction, machining process and applications	
	27	Electro beam machining (EBM)- Introduction, principle, process and applications	
10		**UNIT-04 Metal Forming Processes**	
	28	Press Working - Types of presses, type of dies and punches, selection of press die, die material. Press	
	29	Operations-Shearing, piercing, trimming, punching, notching, shaving, gearing, embossing, stamping.	
	30	Forging - Open die forging, closed die forging, Press forging, upset forging, swaging,	
11	31	up setters, roll forging, Cold and hot forging.	
	32	Rolling - Elementary theory of rolling, Types of rolling mills, Thread rolling,	
	33	roll passes, Rolling defects and remedies.	
12	34	Extrusion and Drawing - Type of extrusion- Hot and Cold,	
	35	Direct and indirect.	
	36	Pipe drawing, tube drawing, wire drawing	

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13	37	**UNIT-05 Metal Finishing Processes :** Purpose of finishing surfaces,Surface roughness-Definition and units	
	38	Honing Process, its applications,Description of hones	
	39	Brief idea of honing machines, Lapping process, its applications	
14	40	Description of lapping compounds and tools,Brief idea of lapping machines.	
	41	Super finishing process, its applications,Polishing,Buffing	
	42	**UNIT-06 Metallic Coating Processes :** Metal spraying – Wire process, powder coating process, applications,	
15	43	Electroplating: Basic principles, Plating metals, applications; Hot dipping: Galvanizing, Tin coating, Parkerising,	
	44	Finishing specifications.	
	45	**Sessional-III**	