

Lesson Plan

Name of the Faculty : Satvinder Singh
 Discipline : Mechanical Engg.
 Semester : 5th
 Subject : W.T-III
 Lesson plan duration : 15 weeks (15September2022 to 16 January 2023)

Week	Theory	
	Lecture Day	Topic (including assignments /tests)
Week 1	1	Milling - Specification and working principle of milling machine
	2	Classification, brief description and applications of milling machine
	3	Main parts of column and knee type milling machine
Week 2	1	Milling machine accessories and attachment – Arbors, adaptors, collets, vices, circular table, indexing head and tail stock, vertical milling attachment
	2	Milling methods - up milling and down milling
	3	Identification of different milling cutters and work mandrels
Week 3	1	Work holding devices
	2	Milling operations – face milling, angular milling, form milling, straddle milling and gang milling.
	3	Thread milling, Simple Numerical
Week 4	1	Gear hobbing
	2	Gear shaping, gear finishing processes
	3	Test
Week 5	1	Grinding- Purpose of grinding
	2	Various elements of grinding wheel – Abrasive, Grade, structure, Bond
	3	Common wheel shapes and types of wheel – built up wheels, mounted wheels
Week 6	1	Diamond wheels. Specification of grinding wheels as per BIS
	2	Truing, dressing, balancing and mounting of wheel.
	3	Grinding methods – Surface grinding,
Week 7	1	Cylindrical grinding and centreless grinding.
	2	Grinding machine – Cylindrical grinder, surface grinder,
	3	Internal grinder, centreless grinder, tool and cutter grinder.
Week 8	1	Selection of grinding wheel
	2	Assignment
	3	Test
Week 9	1	Introduction to modern Machining processes

	2	Modern Machining Processes- Mechanical Process - Ultrasonic machining (USM): Introduction, principle, process, advantages and limitations, applications
	3	Electro Chemical Processes - Electro chemical machining (ECM) – Fundamental principle, process, applications,
Week 10	1	Electro chemical Grinding (ECG) – Fundamental principle, process, application
	2	Electrical Discharge Machining (EDM) - Introduction, basic EDM circuit,
	3	EDM Principle, metal removing rate, dielectric fluid, applications
Week 11	1	Laser beam machining (LBM) – Introduction, machining process and applications
	2	Plasma Arc machining Introduction, principle, process and applications
	3	Revision
Week 12	1	Metallic Coating Processes- Metal spraying – Wire process, powder process, applications
	2	Electroplating, anodizing, galvanizing
	3	Organic coating, oil base paint & rubber base coating
Week 13	1	Purpose of finishing surfaces
	2	Honing Process, its applications
	3	Description of hones
Week 14	1	Brief idea of honing machines.
	2	Lapping process, its applications.
	3	Description of lapping compounds and tools.
Week 15	1	Brief idea of lapping machines, super finishing process & applications
	2	Polishing, Buffing, Burnishing
	3	Test