

Lesson Plan

Name of the Faculty : Sh. VIJAY DAHIYA
 Discipline : Mechanical Engg.
 Semester : 5th
 Subject : W.T-III
 Lesson plan duration : 15 weeks (from September, 2023 to December, 2023)

Week	Theory	
	Lecture Day	Topic (including assignments /tests)
Week 1	1 st	Milling- Specification and working principle of milling machine
	2 nd	Classification, brief description and applications of milling machine
	3 rd	Main parts of column and knee type milling machine
Week 2	1 st	Milling machine accessories and attachment – Arbors, adaptors, collets, vices, circular table, indexing head and tail stock, vertical milling attachment
	2 nd	Milling methods - up milling and down milling
	3 rd	Identification of different milling cutters and work mandrels
Week 3	1 st	Work holding devices
	2 nd	Milling operations – face milling, angular milling, form milling,
	3 rd	form milling, straddle milling, gang milling
Week 4	1 st	Cutting parameters Indexing on dividing heads, plain and universal dividing heads.
	2 nd	Indexing methods: direct, Plain or simple, compound,
	3 rd	differential and angular indexing.
Week 5	1 st	numerical problems on indexing
	2 nd	Revision
	3 rd	Mock Test
Week 6	1 st	Gear Manufacturing and Finishing Processes- Gear hobbing
	2 nd	Gear shaping , Gear finishing processes
	3 rd	Grinding- Purpose of grinding
Week 7	1 st	Various elements of grinding wheel – Abrasive, Grade, structure, Bond
	2 nd	Common wheel shapes and types of wheel – built up wheels, mounted wheels
	3 rd	Diamond wheels. Specification of grinding wheels as per BIS
Week 8	1 st	Truing, dressing, balancing and mounting of wheel.
	2 nd	Grinding methods – Surface grinding,
	3 rd	Cylindrical grinding and centreless grinding.
Week 9	1 st	Grinding machine – Cylindrical grinder, surface grinder,

	2 nd	Internal grinder, centreless grinder, tool and cutter grinder.
	3 rd	Selection of grinding wheel
Week 10	1 st	Assignment
	2 nd	Modern Machining Processes- Mechanical Process - Ultrasonic machining (USM): Introduction, principle, process, advantages and limitations, applications
	3 rd	Electro Chemical Processes - Electro chemical machining (ECM) – Fundamental principle, process, applications,
Week 11	1 st	Electro chemical Grinding (ECG) – Fundamental principle, process, application
	2 nd	Electrical Discharge Machining (EDM) - Introduction, basic EDM circuit,
	3 rd	EDM Principle, metal removing rate, dielectric fluid, applications
Week 12	1 st	Laser beam machining (LBM) – Introduction, machining process and applications
	2 nd	Electro beam machining (EBM)- Introduction, principle, process and applications
	3 rd	Revision
Week 13	1 st	Metallic Coating Processes- Metal spraying – Wire process, powder process, applications
	2 nd	Powder coating
	3 rd	Metal Finishing Processes- Purpose of finishing surfaces.
Week 14	1 st	Surface roughness-Definition and units
	2 nd	Honing Process, its applications
	3 rd	Description of hones
Week 15	1 st	Brief idea of honing machines. Lapping process, its applications. Description of lapping compounds and tools.
	2 nd	Brief idea of lapping machines.
	3 rd	Super finishing process, its applications. Polishing Buffing

