Government Polytechnic Gariyaband Dist- Gariyaband

Department of Mechanical Engineering

LESSON PLAN

Session :- 2024-25(July-Dec)

Name of Faculty :- LALIT KUMAR SAHU **Course :-** Diploma

Branch/Semester :- Mechanical 5TH Sem **Total Class Per Week :-** 05

Subject Name & Code :- Machine Tool Technology2037573(037)

S.No	Unit	Topic	Planned Date	Execution Date	Remark
1.	UNIT 1 Metal Cutting	**1.1 Cutting Tools – types, requirements, specification, applications, tool materials (HCS, HSS, carbides, ceramics, diamond, CBN), properties & applications**	20, 21, 22, 23, 28 Aug 2024		
2.		**1.2 Geometry of Single Point Cutting Tool – tool angles, tool geometry, influence of tool angles, tool signature, ASA, ORS & interrelationship**	29 Aug, 2, 3, 4 Sep 2024		
3.		**1.3 Mechanics of Metal Cutting – theories, chip formation, types of chips, BUE, chip breakers, orthogonal & oblique cutting, stress-strain, velocity relation, power & energy**	5 (2 Classes), 9, 10, 11, 12 (2 Classes), 13 Sep 2024		
4.		Assignment/tutorial classes	16 Sep 2024		
5.	**UNIT 2 Mechanics of Machining**	2.1 Cutting forces & tool life – forces on tool, Merchant circle diagram, dynamometer, tool wear, tool life equation, cutting parameters, economical cutting speed	17, 18, 23, 25, 26 (2 Classes) Sep 2024		

6.		2.2 Machinability – concept, evaluation, machinability index, tool failure mechanism, factors affecting machinability	3 Oct (3 Classes), 4 Oct 2024		
7.		2.3 Thermal aspects in machining – heat generation, temperature measurement, cutting fluids, functions, characteristics & applications	7, 9, 10 (3 Classes), 11 Oct 2024		
8.		Assignment/tutorial classes	14 Oct 2024		
9.	**UNIT 3** **Shaper, Slotter, Planer & Drilling**	3.1 Shaper – principle, classification, specification, parts & functions, applications, safety precautions	16 Oct, 17 Oct (3 Classes)		
10.		3.2 Slotter – working principle, classification, specification, parts & functions, applications	21, 22 Oct 2024		
11.		3.3 Planer – principle, classification, parts, specifications, applications	23, 24 Oct (1 Class)		
12.		3.4 Drilling, Reaming & Boring – principle, parts, drill nomenclature, counter boring, counter sinking, spot facing, reaming, boring machines & tools	24 Oct (2 Classes), 25 Oct, 4 Nov, 6 Nov		
13.		Assignment/tutorial classes	7 Nov (1 Class)		
14.		4.1 Milling – principle, classification of milling machines, parts & functions, specifications	7 Nov (2 Classes), 11 Nov		
15.		4.2 Milling cutters – face milling cutter, end milling cutter, staggered tooth cutter, side & face cutter, form cutter, slitting saw	13 Nov, 14 Nov (3 Classes)		
16.		4.3 Milling operations – plain milling, face milling, side milling, end milling, straddle milling, gang milling, slotting, slitting, up & down milling	18, 19, 20 Nov		
17.		4.4 Dividing head – types, functions, indexing methods, index plates	21 Nov (3 Classes)		
18.		4.5 Broaching – principle, types of broaches, broaching machines, parts & functions, nomenclature	25, 27, 28 Nov (3 Classes)		
19.		Assignment/tutorial classes			

20.	**UNIT 4** **Milling & Broaching**	5.1 Grinding wheels – types, abrasive materials, bonding materials, wheel classification, selection, balancing, glazing, loading, dressing, truing, designation	2, 3, 4, 5 (2 Classes), 6 Dec 2024		
21.		5.2 Grinding machines – working principle, parts, grinding processes, work holding devices, coolants, grinding defects & remedies, safety practices	9 Dec 2024		
22.		5.3 Finishing processes – honing, lapping, super finishing, polishing, buffing, tolerances, limitations & applications	9 Dec 2024		
23.		Assignment/tutorial classes			
24.	**UNIT 5** **Grinding & Finishing Processes**	Installation of machine tools – foundation, leveling & alignment Factors affecting working accuracy of machine tools Acceptance test for lathe, test charts			
25.		Assignment/tutorial classes			

Total Number Of Lecture Planed :-

Total Number Of Lecture Executed :-

Signature of Subject Faculty **H.O.D (Mechanical Engg.)**

Date…… **Date……**