

Lesson plan for 2018-19		Planned	Actual
Lecture no	Topics to be covered	Date	Date
1	Design of single point cutting tools: Different systems of tool nomenclature like MRS, ORS and NRS.	01-01-2019	01-01-2019
2	Design of single point cutting tools: Different systems of tool nomenclature like MRS, ORS and NRS.	02-01-2019	02-01-2019
3	Interrelationship among different systems of nomenclature for tool angles.	03-01-2019	03-01-2019
4	Interrelationship among different systems of nomenclature for tool angles.	04-01-2019	04-01-2019
5	Constructional features of solid tool, tipped tools, mechanically held regrind able insert type tools and throw away tip type tools.	07-01-2019	07-01-2019
6	Design of shanks, cutting tip and chip breakers for HSS and Carbide tools. ISO coding system for tipped tools and tool holders.	08-01-2019	08-01-2019
7	various types of chips,	09-01-2019	09-01-2019
8	Orthogonal and oblique cutting, ,	11-01-2019	11-01-2019
9	Mechanics of orthogonal steady state metal cutting, shear plane and shear plane angle	14-01-2019	16-01-2019
10	Merchant's circle of forces, velocity relations.	16-01-2019	17-01-2019
11	Merchant's Concept of specific power consumption in machining. theory & modified theory of metal cutting.	17-01-2019	18-01-2019
12	Dynamometer requirements, force measurement, electric transducers, strain gage lathe dynamometer, strain rings,	18-01-2019	21-01-2019
13	Milling dynamometer, drilling dynamometer, surface grinding dynamometer, piezoelectric dynamometry.	21-01-2019	21-01-2019
14	Measurement and specification of surface finish, primary cutting edge finish, fracture roughness, BUE formation and its influence on finish, secondary cutting edge finish, geometrical contribution to roughness, edge finishing and residual stress.	23-01-2019	23-01-2019
15	Measurement and specification of surface finish, primary cutting edge finish, fracture roughness, BUE formation and its influence on finish, secondary cutting edge finish, geometrical contribution to roughness, edge finishing and residual stress.	24-01-2019	25-01-2019
16	Function of coolant, types of coolants, choice of coolants for various machining processes. Vapors and mist, cryogenic cooling and dry machining.	25-01-2019	25-01-2019
17	Function of coolant, types of coolants, choice of coolants for various machining processes. Vapors and mist, cryogenic cooling and dry machining.	28-01-2019	30-01-2019
18	Properties of cutting tool materials. Major tool material types. Plain carbon steel, high speed steel, cast alloys, cemented tungsten carbide,	30-01-2019	30-01-2019
19	Titanium carbides, ceramic and cermet tools, synthetic diamond, polycrystalline diamond (PCD), cubic boron nitride (CBN), coated tools.	31-01-2019	08-02-2019

20	Definition, flank wear and crater wear, criteria for tool failure, Components of product cost.	01-02-2019	18-02-2019
21	Effect of cutting parameters and tool geometry on tool life. Taylor's tool life equation	04-02-2019	20-02-2019
22	Experimental methods to find Taylor exponents.	18-02-2019	21-02-2019
23	Optimum cutting velocity for minimum cost of production	20-02-2019	22-02-2019
24	Optimum cutting velocity for maximum production rate.	21-02-2019	25-02-2019
25	Design of Form Tools and broaches: Various types such as flat form tool, tangential form tool, circular form tool, constructional details and fields of application.	22-02-2019	27-02-2019
26	Profile design of flat and circular form tools.	25-02-2019	28-02-2019
27	Profile design of flat and circular form tools.	27-02-2019	01-03-2019
28	Broach nomenclature, design steps for circular pull type,	28-02-2019	06-03-2019
29	Broach nomenclature, design steps for circular pull type,	01-03-2019	07-03-2019
30	key way and spline broaches.	06-03-2019	08-03-2019
31	Heat generation in metal cutting, heat transfer in a moving material,	07-03-2019	11-03-2019
32	Temperature distribution in metal cutting,	08-03-2019	20-03-2019
33	temperature in primary deformation zone, temperature in secondary deformation zone,	11-03-2019	22-03-2019
34	Effect of cutting speed on temperature	13-03-2019	23-03-2019
35	prediction of temperature distribution in machining	15-03-2019	25-03-2019
36	radiation methods, hardness and	18-03-2019	27-03-2019
37	microstructure changes in steel tools.	22-03-2019	28-03-2019
38	Measurement of cutting temperature, work-tool thermocouple, direct thermocouple measurement,	25-03-2019	01-04-2019
39	radiation methods, hardness and microstructure changes in steel tools.	27-03-2019	03-04-2019
40	Design of gear milling cutters: Types of gear milling cutters, standard set of cutters, limitations on accuracy	28-03-2019	04-04-2019
41	Design of form disc type,	01-04-2019	
42	End mill type	03-04-2019	
43	Gear hobbing cutters	04-04-2019	