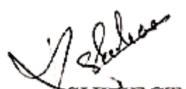


Name of the Institute:	R.K. INSTITUTE OF ENGG. & TECH.		
Department:	Mechanical Engineering		
Semester:	4 <sup>th</sup> SEM.		
Subject Name with code:	TOOL ENGINEERING TH:5(b)		
Total No. of Class (Required):	45	FROM-22/12/2025	TO-18/04/2026
Faculty Name:	Mr. KEDARNATH SAHOO		
Class No.	Brief Description of the Topic/Chapter to be taught		Remarks
1	Metal Cutting: Mechanics of Metal cutting; requirements of tools;		
2	cutting forces; types of chips;		
3	chip thickness ratio; shear angle ;		
4	simple numerical only;		
5	Types of metal cutting process; or- thogonal;		
6	oblique and form cutting;		
7	Cutting fluids: types;		
8	characteristics and applications.		
9	Tool wear: Types of wear;		
10	Tool life; Tool life equations.		
11	Machinability: definition;		
12	factors affecting machinability;		
13	machinability index.		
14	Tool materials: Types; characteristics;		
15	applications; Heat treatment of tool steels;		
16	Specification of carbide tips;		
17	Types of ceramic coatings.		
18	Cutting Tool Geometry: Single point cutting tool;		
19	drills; reamers;		
20	milling; cutters.		
21	Types of dies and construction: Simple Die;		
22	Compound Die;		
23	Progressive Die; Combination Die.		
24	Punch & Die mountings: pilots;		
25	strippers; misfeed detectors;		
26	Pressure Pads; Knock outs;		
27	stock guide; Feed-Stop;		

28	guide bush; guide pins.	
29	Die Design Fundamentals; Die Operations;	
30	blanking; piercing;	
31	shearing; cropping;	
32	notching; lancing;	
33	coining; embossing; stamping; curling;	
34	drawing; bending; forming; Die set; Die shoe;	
35	Die area;	
36	Calculation of clearances on die and punch for blanking and piercing dies;	
37	Strip layout; Calculation of material utilization factor.	
38	Forming Dies: Bending methods; Bending Dies; bend allowance; spring back; spanking;	
39	bending pressure; pressure pads; development of blank length.	
40	Drawing: operations; Metal flow during drawing; Calculation of Drawing blank size; variables affecting metal flow during drawing;	
41	single action and double action dies; combination dies.	
42	Fundamentals of other Tools: Constructional features of - Pressure Die casting dies;	
43	metal extrusion dies; injection molding dies;	
44	forging dies; plastic extrusion dies.	
45	Revision	

HOD  
MECHANICAL

  
SUBJECT  
EXPERT