

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

Date of

DEPARTMENT OF MECHANICAL ENGINEERING

TEACHING PLAN

Course Code		Course Title	Sen	nester	Branches	Contact Periods /Week	Acade	ir	mmencem ent of Semester	
191	ме5етоз	TOOL DESIG	N	v	Mechanical Engineering	5	2021-2	2022	1-10-2021	
COURSE OUTCOMES										
	Describe the important Explain jigs, illustration jigs. [K2]		requirements of single point and multi-point cutting tools.[K2]							
7										
			strate the function of jigs for several operations and simple design of a principles of fixtures and describe the application of fixtures for machine thine. [K3]							
=										
	5	Explain the fundar	nentals of	die cutt	ing operations and	d design o	f simple pro	ogressive r	nd sets.	
UNI	r	Out Comes / Bloom's Level	Topics No.		Topics/Activity	,	ext Book / leference	Contact Hour	Delivery Method	
			DESIGN OF CUTTING TOOLS							
	•	single [K2]	1.1		n of cutting tools luction	Т	1, T2, R1	1	Chalk &	
	1		1.2		cutting process,		1, T2, R1	1	Talk, PP7	
		o <u>s</u>	1.3		tion of tool mater		1, T2, R1	1	Videos	
	100	requireme nt cutting		Desig	n of single points		1, T2, R1	1	_	
	1			Desig	n of single point	tool	1, T2, R1	1	,	
ľ				multip	point cutting tool	1	1, T2, R1	1	Chalk &	
576	1			form t	tools	7	1, T2, R1	1	Talk, PF	
he design multi-poi		esig lti-r	1.8	milli	ng cutter	7	1, T2, R1	1	videos	
			1.9	Millin	g cutters	7	1, T2, R1	1	7	
	이 집에 가지 않는 그렇게 그렇게 그렇게 하는 것이 없었다.		1.10	Broad	ches and chip bre	aker. T	1, T2, R1	1		
		Explain point ar	1.11	Chip	breaker.	Т	1, T2, R1	1		
	Course Syllabu	Beyond	1.12	Adva	nced Metal cutti	ing T	1, T2, R1	1		
							Total	4.		



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	Course Beyond		Advanced Metal cutting	T1, T2, R1			
	Syllabus	1.12	process,	11, 12, 11	1		
				Total	11		
	60	LOCATING AND CLAMPING METHODS					
	Describe the importance of cutting tools and work holding device in design.[K2]	2.1	locating and clamping methods introduction	T1, T2, R2	1		
	Describe the importance of cuttin tools and work holding device in design.[K2]	2.2	Basic Principles of Location	T1, T2, R2	1	Chalk & Talk,	
	F. F.	2.3	Locating methods	T1, T2, R2	1	Activity	
II	od jor	2.4	Principles of clamping	T1, T2, R2		PPT	
	ĔŁ	2.5	Mechanical actuation	T1, T2, R2	1	videos	
	wo wo	2.6	Pneumatic actuation	T1, T2, R2		4	
	escribe the ols and we sign.[K2]	2.7	Hydraulic actuation	T1, T2, R2		-	
	ls a ign	2.8	Clamping force	T1, T2, R2	1 1	~ "	
	Des	2.9	Clamping force analysis	T1, T2, R2	1	Chalk &	
-		2.10	Design problems	T1, T2, R2		Talk, PPT videos	
	Course Beyond Syllabus	2.11	Design of Location methods	T1, T2, R2	1	Videos	
	Synaous		methous	Total	11		
-	T		DESIGN OF JIGS	10	11		
	the function erations and 2]	3.1	design of jigs introduction	T1, T2, R1	1	Т	
	1 5 1	3.1		T1, T2, R1	1	Chalk &	
	for	3.3	drill jigs Types of drill jigs	T1, T2, R1	1	Talk, PPT	
	the fun erations [2]	3.3	Types of drill jigs General considerations in	T1, T2, R1	1, 1	videos	
	2 호 호	3.4	the designs	11, 12, 10,	1	7,000	
m	illustrate several op 1 of jigs.[k	3.5	drill jigs	T1, T2, R1	1		
111	of j	3.6	Drill bushings	T1, T2, R1	li	+	
	s se se	3.7	Types of Drill bushings	T1, T2, R1	 	Chalk &	
	n jigs, for se design	3.8	Design of Boxes,	T1, T2, R1	1	Talk, PPT	
	I = 10	3.9	designs of Plate	T1, T2, R1	1	videos	
	Explai of jigs simple	3.10	Design of Channel	T1, T2, R1	 	-	
	of sim	3.11	Design of Angle plate	T1, T2, R1	+ i	-	
		3.11		T1, T2, R1	+		
	Course Beyond Syllabus	. 3.12	Design analysis of jigs	11, 12, 12	,1		
				Total	12		
	4		DESIGN OF FIXT	URES			
	3) Sols	4.1	Introductions of fixtures	T1, T2, R1	1		
	sign res a atio atio (K	4.2	Types of fixtures,	T1, T2, R1	1	Chalk &	
	e sp. Si	4.2				Talk, PP7	
IV ,	te the desorber of fixture of the application or machine Machine	4.3	General considerations in the designs	T1, T2, R1	1	videos	
4	C # # E E	4.4	Fixtures for lathe	T1, T2, R1	1		
8 h	Illus ncip arribe d N	4.5	Fixtures for milling	T1, T2, R1		Chalk &	
i i	principle princi	4.6	Fixtures for boring	T1, T2, R1		Talk, PP	
dayo	무정박	4.7	Fixtures for broaching	T1, T2, R1		-	
The property		4.1	Fixtures for oronoming	11, 12,	1		



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		1 4 8	General considerations in			4	
		4.8	fixtures	mi ma Di	$\overline{}$	Chalk &	
		4.9	Fixture design for NC	T1, T2, R1		Talk	
*		4.9	Machine.	T1,T2,R1	1	PPT	
		4.10	Fixture design for NC	1,1,12,	-	Videos	
			Machine. Applications of NC	T1,T2,R1	1	Chalk & Talk	
		4.11	machines			Taik	
			Working of of NC	T1,T2,R1	.J		
1		4.12	machines	T1,T2,R1	1		
		4.13	Features of NC machines	T1, T2, R2	1		
Co	ourseBeyond	4.14	Direct Numerical controls				
Sy	llabus			Total	14		
		T	DESIGN OF DIES	m. m. n.	1		
-	-	5.1	Introduction of dies	T1, T2, R2	•		
	ve and	5.2	Fundamentals of die cutting operations	T1, T2, R2	l		
	ing	5.3	Cutting action in punch	T1, T2, R2	1	Chalk &	
	ogr	5.4	Cutting action in die	T1,T2,R1	1	Talk, PPT videos	
	e pr	5.6	die operations	T1,T2,R1	1		
	ntals of die cutting of simple progressive	5.7	Die clearance	T1,T2,R1	1		
v	als f sin	5.8	Die applications	T1,T2,R1	1		
	fundamentals d design of sin	5.9	General considerations in the designs	T1,T2,R1	1		
	Junda J. des	5.10	Design of simple die	T1, T2, R2	1		
	. Explain the fuoperations and sets. [K2]	5.11	Design of progressive die	T1, T2, R2	1	Chalk & Talk,	
	plain ation [K2	5.12	Design of simple die	T1,T2,R1	1	Students Seminar	
	oper sets.	5.13	Design and analysis of dies	T1,T2,R1	1	Chalk & Talk ppt	
	Course Beyond Syllabus	5.14	Features of die casting	T1, T2, R2	1		
	Synaous			Total	14		
		C	UMULATIVE PROPOSED	PERIODS	Total	62	
Text Boo	ks:						
S.No.			2				
T1	R.K. Jain and S.G	C. Gupta,	Production Technology, Kha	ınna Publishe	rs, Edition	,200, 16 ^m	
T2	Cyril Donaldson,	Tool design	n, 5 th Edition, McGraw hill Pub	olications, 201	7		
T3	S Kalpak Jian S R. Schmidt, Manufacturing- Engineering and Technology, Pearson						
	•		7)	57			
	publications, 7 th	Edition, 2	014				



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S.No.	<i>y</i>
RI	Manufacturing Technology Vol-II/P.N Rao Tata McGraw Hill 2013
R2	Dry Time 100 Courts Deadwesting Technology Khanna Publishers, Edition 10 2017
R3	Elanchezhian & M. Vijay an Machine Tools, Anuradha Publications Editions 1st 2008
Web Deta	ails
1	https://nptel.ac.in/courses/112106179/
2	https://youtu.be/ljveGnQw2G0
3	https://nptel.ac.in/courses/1123106178/

		Name	Signature with Date
i.	Faculty	J.NARESH BABU	Josepher
	Course Coordinator	J.NARESH BABU	Inas Books
	Module Coordinator	Da SANJEEV KUMAR '	\sim
	Programme Coordinator	Dr. A. GOPI CHAND	Afant

