RGPV	(DIPLOM BHOPA	-		RRICULUM IE COURSE	FORMA	⊤ -3	Sheet N 1/4	0.
Branch		Mec	hanical Engi	neering	Seme	ster	V	1
Course	Code 6	01 C	ourse Name	Design of Machi	ne Eleme	ents		
Course	e Outcome	· ·	n fundamenta ne elements.	ls of design of	Teacl	hing Hı	rs M	larks
Learni	ng Outcom	PI	te stresses, stra oading.	ain for a component		3		10
C	ontents	Types Bendin for Du	of loads, cond g and Torsion ctile and Britt	osophy and phases cepts of stress, Stra- stresses, Principal le Materials, Beari S-N curve, Endura	ain, Types Stresses, ing pressu	s of St Stress are, , c	tresses, C – Strain concept o	Crushing, Diagram f Creep,
Method	of Assessm	ent	Pape	r-Pen Test (Part of	Progressi	ive – 1)	
Learnii	ng Outcom	<u> </u>	echanical desi of machine e	ign data book for lements.		5		5
C	Contents	Concer introdu	tration, Cause ction to Intern	ondition for select s & Remedies, De ational standards, a gn and preferred nu	esignation dvantages	of ma of sta	terials as ndardizat	s per IS, ion, Use
Method	l of Assessm	ent Theory	Exam					
Learni	ng Outcom		considerations	tic failures, modern for a given design		5		5
C	ontents	stress ti conside	heory & Maxir crations, Ergon	ilures, Principal nor num distortion energomics & Aesthetic of nd concept of produ	gy theory. considerat	Moder ion in c	n design	
Method	of Assessm	ent Theory	Exam					
Cours	se Outcom	e 2 Design shear l		nents subject to dir	ect loads,	Teach	ning Hrs	Marks
Learnii	ng Outcom		nte design stres	ses, parameters for	joints,		8	10

Contents	Design of Cotter Joint, Knuckle Joint Design of Levers- Hand/Foot Lever & Bell Crank	Lever	r								
Method of Assessment	Theory Exam										
Learning Outcome 2	Calculate design stresses, parameters for C–Clamp Off-set links, Overhang Crank.	,	6	6							
Contents	Design of C–Clamp, Off-set links, Overhang Cran	K									
Method of Assessment	Paper-Pen Test (Part of Progress	sive –	2)								
Learning Outcome 3	Select a suitable bearing for a given application	•	6	4							
Contents	Antifriction Bearings: Classification of Bearings, s contact, Terminology of Ball bearings, Life Load r load rating and Basic dynamic load rating, Selectio manufacturer's catalogue.	elatio	nship, Basi	ic static							
Method of Assessment	Paper-Pen Test (Part of Progress	sive –	2)								
Course Outcome 3	Design machine elements subject to bending moments, twisting moments.	Teac	ching Hrs	Marks							
Learning Outcome 1	Design a shaft		8	10							
Contents	Introduction to pure bending, fundamental equation $M/I = f/y = E/R$ Types of Shafts, Shaft materials, Standard Sizes, D and Solid) using strength and rigidity criteria,		·								
Method of Assessment	Theory Exam										
Learning Outcome 2	Design keys, couplings		7	10							
Contents	Design of Sunk Keys (Rectangular and square), Effect of Keyways on strength of shaft, Design of Couplings – Muff Coupling, Protected type Flange Coupling.										
Method of Assessment	Theory Exam										
Course Outcome 4	Select a power screw, spur gear for given application.		ching Irs	Marks							
Learning Outcome 1	Select a power screw for given application		7	10							

Contents	Basic concept of power screw, Thread Profiles used a Relative merits and demerits of each, Torque require friction, Self-locking and overhauling. Efficiency of of stresses induced, Design of Screw Jack; Toggle Ja nut)	d to ove power s	ercome (screws, '	thread Types							
Method of Assessment	Theory Exam										
Learning Outcome 2	Select a suitable spur gear for given application.		6	10							
Contents	Spur gear design considerations, Lewis equation for spur gear teeth, Power transmission capacity of spur			-							
Method of Assessment	Paper-Pen Test (Term Work))									
Course Outcome 5	Design bolted joints, welded joints, springs	Teachi	ng Hrs	Marks							
Learning Outcome 1	Design bolted joints, welded joints for given loading.	7	7	10							
Contents	Stresses in Screwed fasteners, Bolts of Uniform Stree Joints subjected to eccentric loading, Design of Paral fillet welds, axially loaded symmetrical section, Mer screwed and welded joints.	lel and	Transve	erse							
Method of Assessment	Theory Exam										
Learning Outcome 2	Calculate dimensions of a spring under given loadin a given application.	g for	7	10							
Contents	Design of springs: Classification and Applications of Springs, Sprint terminology, Materials and Specifications, Stresses in springs, Wahl correction factor, Deflection of springs, Energy stored in springs, Design										
Method of Assessment	Theory Exam										

K	GPV (Dij	oloma Wing	g) SCHEN	IE FOR	Br	anch Cod	le	Course Coo	de		LO ode	
		opal		OUTCOME	M	0	2 6	0	1		1 ^{Fe}	ormat No. 4
COUR	RSE NAME		chine Elements			1						
CO De	scription	Explain funda	mentals of design of machin	ne elements.								
LO De	scription	Calculate stress	es, strain for a component under	· loading.								
	-		SCI	HEME OF STUDY								
S. No.	Lear	ning Content	Teaching –Learning Method	Description of T	-L Pro	cess	Teach Hrs.	Pra /Tut			.Rs uired	Remarks
1	phases in der consideration concepts of s of Stresses, of and Torsion Stresses, Str for Ductile a Bearing press Creep, Creep	ns, Types of loads stress, Strain, Typ Crushing, Bending stresses, Principal ess – Strain Diagr and Brittle Materia sure, , concept of o Curve, Fatigue, durance Limit,	teaching, quiz es g l am lls,	Teacher will explain and provide handout Teacher will conduct make students practi knowledge	to stud t a quiz	ents. to	3	0		Hando chalk PPT, t book,	board,	NIL
			SCHEN	IE OF ASSESSME	NT							
S. No.	Method of	fAssessment	Descripti	on of Assessment			ľ	Maxim Mark			ources uired	External / Internal
1	Paper-Pen T		Students will be asked to calcul given loading.	ate stresses/strain for a	compo	nent u	nder	10			aper + g Scale	Internal
		A	DDITIONAL INSTRUCTIO	ONS FOR THE HO	D/ FA	CULI	ΓY (IF A	NY)				
			_	t of Progressive – 1								

R	GPV (Di	ploma Wing)		SCHEME	FOR	Bra	nch C	ode	C	ourse Co	ode	CO Code	LO Code		
		lopal	LE	ARNING O	UTCOME	M	0	2	6	0	1	1	2	For	mat No. 4
COUR	SE NAME	Design of Machine I	Elements			1 1			1	1	1		1		
CO De	scription	Explain fundamenta	als of desig	gn of machine el	ements.										
LO De	scription	Use mechanical desig	gn data boo	ok for design of n	nachine elements.										
	-		-	SCHEN	AE OF STUDY										
S. No.		Learning Content		Teaching – Learning Method	Description of Process	T-L		'each Hrs.		act. /′ Hrs.		LRs	Requi	ired	Remarks
1	factor of Sat & Remedies IS, introduct advantages of standards in	fety, condition for select fety, Stress Concentratio b, Designation of materia tion to International stan of standardization, use o design and preferred nu f design data book,	n, Causes Ils as per dards, f	Interactive Classroom teaching, quiz	Teacher will expl the contents and provide handout t students. Teacher conduct a quiz to students practice knowledge	to will make	5		0			board,	outs, ch , PPT, charts	text	NIL
	1			SCHEME	OF ASSESSMEN	T						1			
S. No.	Method Assessm	-	Γ	Description of As	sessment					ximu Iarks			ources Juired	-	External / Internal
1	Theory Exam	m Students will be problem.	e asked to n	nake use of mechan	nical design data boo	ok for a	a giv	ven		5		Questi + Rati	ion Pap ing Sca		External
		ADDIT	TIONAL I	NSTRUCTIONS	S FOR THE HOL)/ FAC	CUL	LTY (IF A	NY)					
					Nil										

R	GPV (Di	ploma Wing	g)	SCHE	ME FOR	I	Branch C	ode	C	Course Co	ode	CO Code	LO Code		4
	-	iopal	<i>,</i>	LEARNING	GOUTCOME	M	0	2	6	0	1	1	3	For	nat No. 4
COUR	SE NAME	Design of Macl	hine	Elements										1	
CO De	scription	Explain funda	ment	als of design of maching	ine elements.										
LO Des	scription	Explain theory of	f elast	ic failures, modern desig	gn considerations for a g	iven	desigr	n probl	em.						
				S	CHEME OF STUDY										
S. No.	Lear	rning Content		Teaching – Learning Method	Description of T-L	Pro	cess	Tea Hrs		Pra /Tut l		LRs	s Requ	ired	Remarks
1	Principal no Maximum s Maximum d theory. Mod consideratio Aesthetic co Ecology, So	Elastic Failures, ormal stress theory, hear stress theory listortion energy lern design ons, Ergonomics & onsideration in design orduct design.	Interactive Classroom teaching, quiz	Teacher will explain the and provide handout to Teacher will conduct a make students practice knowledge	stud quiz	ents. to	5		0		boar	douts, c d, PPT, ual, cha	,	NIL	
	1			SCHE	EME OF ASSESSME	NT									
S. No.	Method o	f Assessment		Description of A	Assessment	N	/laxin Mari			Reso	urce	s Req	uired		External / Internal
1	Theory Exa		elasti	nts will be asked to expl c failure/ design conside n problem.			5		Ques	stion F	Paper	+ Rati	ng Scal	e	External
		Α	DDI	FIONAL INSTRUCT	TIONS FOR THE HO)D/ F	FACU	LTY	(IF A	ANY)					
					Nil										

-	RGPV (Dip	oma Wing)	SCHEME FOR	LEARNING		Branch	Code	Co	ourse Co	ode	CO Code	LO Code		
	Bho	0,	OUTC	OME	M	t 0	2	6	0	1	2	1	Form	at No. 4
CC	URSE NAME	Design of Machine	e Elements		I		1			I-		I		
CO	Description	Design machine ele	ments subject to direct lo	oads, shear loads.										
LO	Description	Calculate design stre	esses, parameters for joints	s, levers.										
		1	SCH	IEME OF STUD	Y									
S. No		Learning Cor	itent	Teaching – Learning Method		escrip '-L Pr	tion of ocess		each [rs.	Pra /Tut			Rs uired	Remark
1		Joint, Knuckle Joint - Hand/Foot Lever & I	Bell Crank Lever	Interactive classroom teaching, demonstrati on, quiz	expl cont prov stud will to m prac	ents. T	e ndout to Yeacher ct a quiz udents eir			0		Hand chalk board PPT, book chart	d, text	
			SCHEM	IE OF ASSESSM	ENT									
S. N	o. Method of Assessment		Description o	of Assessment					-	aximu Marks		esourc equire		External / Internal
1	Theory Exam		ked to calculate design str nt/Hand or Foot Lever/Bel							10	Pa Ra	estion per + ting ale	Е	xternal
		ADDIT	IONAL INSTRUCTIO	ONS FOR THE H	IOD/	FAC	U LTY (IF A	NY)					
				Nil										
				1 111										

R	GPV (Diplo	ma Wing)	S	SCHEME FOR		I	Branch Co	de	Cou	urse Co	de	CO Code	LO Code		4
	Bhop	al	LEAF	RNING OUTCO	OME	M	0	2	6	0	1	2	2	Forma	at No. 4
CO	URSE NAME	Design of Mach	ine Elemen	ts					I		I				
CO De	escription	Design machine	elements sub	jected to direct loads,	shear load	ls.									
LO De	escription	Calculate design s	tresses, parai	neters for C–Clamp, Of	f-set links	, Ove	rhang (Crank.							
		·		SCHEME OF	STUDY										
S.No	Le	arning Content		Teaching – Learning Method	Desc	ripti Pro	on of 7 cess	Γ - L		ach rs.	Pra /Tut		LF Requ		Remar
1	Design of C–Clar Crank	np, Off-set links, Ov	<i>r</i> erhang	Interactive Classroom teaching, demonstration, quiz, assignments	Teacher contents handout Teacher quiz and to make their know	and p to stu will c give stude	provide idents. conduct assignt nts prac	a nents	6		0		Hando chalk board PPT, t book, charts	ext	
				SCHEME OF AS	SESSME	NT									
S. No.	Method of Assessment		De	escription of Assessm	ent				-		imum arks		esource equired		xternal / Internal
1	Paper-Pen Test			ate design stresses, desig Crank for a given loadin		ters fo	or C–				06	Pa Ra	estion per + ting ale	Int	ernal
	1	ADDIT	IONAL INS	STRUCTIONS FOR	THE HO)D/ F	FACUI	LTY (NY)					
				Part of Progre	essive – 2										

Bhopal LEARNING OUTCOME M 0 2 6 0 1 2 3 Formation of the second of the se	4	de	LO Cod	CO Code	e	ourse Code	Cou		de	anch Co	Br		FOR	ME	SCHEM	oma Wing)	GPV (Diplo	R
Or a gradient of the subjected to direct loads, shear loads. CO Description Design machine elements subjected to direct loads, shear loads. Select a suitable bearing for a given application. SCHEME OF STUDS S. Learning Content Teaching - Learning Method Description of T. L Process Teach Hrs. Pract. /Tut Hrs. LRs Required S. No Learning Content Interactive Classrom relationship, Basic static load rating and Basic dynamic load relationship, Basic static load rating and Basic dynamic load rating, Selection of ball bearings using manufacturer's catalogue. Interactive classrom quiz, assignments Teacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignments to make students practice their knowledge 0 Handouts, board, PPT, text book, charts, SCHEME OF ASSESSMENT	t No. 4	Format	3	2	1	0		6	2	0	M	ЛE	UTCON	d Ol	LEARNING	Ċ,	· •	
LO Description Select a suitable bearing for a given application. SCHEME OF STUDY S. Learning Content Teaching - Learning Method Description of T- Learning Method Teach Hrs. Pract. LRs Required Antifriction Bearings: Classification of Bearings, sliding contact & Rolling contact, Terminology of Ball bearings, Life Load relationship, Basic static load rating and Basic dynamic load rating, Selection of ball bearings using manufacturer's catalogue. Interactive Classroom teaching, demonstration, quiz, assignments Teacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignments to make students practice their knowledge 6 0 Handouts, chalk board, PPT, text book, charts, SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT Schement state s		I	1			I		_							Elements	Design of Machine	RSE NAME	COU
SCHEME OF STUDY S. Learning Content Teaching – Learning Method Description of T- L Process Teach Hrs. Pract. /Tut Hrs. LRs Required Antifriction Bearings: Classification of Bearings, sliding contact & Rolling contact, Terminology of Ball bearings, Life Load relationship, Basic static load rating and Basic dynamic load rating, Selection of ball bearings using manufacturer's catalogue. Interactive Classion teaching, demonstration, quiz, assignments Teacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignments to make students practice their knowledge 6 0 Handouts, chalk board, PPT, text book, charts, SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT												loads.	oads, shear l	ect lo	ents subjected to dire	Design machine elen	scription	CO De
S. No Learning Content Teaching - Learning Method Description of T. L Process Teach Hrs. Pract. / Tut Hrs. LRs Required Antifriction Bearings: Classification of Bearings, sliding contact & Rolling contact, Terminology of Ball bearings, Life Load relationship, Basic static load rating and Basic dynamic load rating, Selection of ball bearings using manufacturer's catalogue. Interactive Classroom teaching, demonstration, quiz, assignments to make students practice their knowledge 6 0 Handouts, chalk book, charts, assignments to make students practice their knowledge Comparison of the charts, char													on.	catio	ng for a given applic	Select a suitable bea	scription	LO De
S. No Learning Content Learning Method Description of 1- L Process Teach Hrs. Pract. Lks Antifriction Bearings: Classification of Bearings, sliding contact & Rolling contact, Terminology of Ball bearings, Life Load relationship, Basic static load rating and Basic dynamic load rating, Selection of ball bearings using manufacturer's catalogue. Interactive Classroom teaching, demonstration, quiz, assignments Teacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignments to make students practice their knowledge 6 0 Handouts, chalk board, PPT, text book, charts, SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT												TUDY	EME OF S	SCHE	S		'	
Antifriction Bearings: Classification of Bearings, sliding contact & Rolling contact, Terminology of Ball bearings, Life Load relationship, Basic static load rating and Basic dynamic load rating, Selection of ball bearings using manufacturer's catalogue. Interactive Classroom teaching, demonstration, quiz, assignments or make students practice their knowledge 6 0 Handouts, chalk board, PPT, text book, charts, charts	Remark	LRs Required								-		ng	Learni		t	Learning Conte		
		chalk board, PPT, text book,)	C	6	6	de s. ict a ke	provid udents conducts to mak	tts and ut to st er will nd give ments ts prac	conter hando Teach quiz a assign studer	,	Classroom teaching, demonstrati quiz,	e.	ngs, Life Load asic dynamic load	erminology of Ball bea static load rating and I	olling contact, Ter lationship, Basic s	Ro rel
											ENT	ESSM	E OF ASSE	EMF	SCHI			
S. No. Method of Assessment Assessment Description of Assessment Marks Resources Required	External / Internal				-		N						ssessment	of As	Description o			5. No.
1Paper-Pen TestStudents will be asked to select a bearing for a given application using manufacturing04Test Paper + Rating ScaleIn Rating Scale	ternal	-				04		ng	cturir	anufa	ing m	ation u	given applica	for a g	d to select a bearing fo		Paper-Pen Test	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)		· · ·				ANY)	F A	Y (II	JLTY	FACU)D/ I	HE H	NS FOR T	TIOI	ONAL INSTRUCT	ADDIT		
Part of Progressive – 2												sive – 2	of Progress	Part o	Pa			

RGPV (D	iplon	na Wing)	SCHEME	E FOR	В	ranch Co	de	Cou	ırse Co	ode	CO Code	LO Code		
	-	U,	LEARNING O	UTCOM	E M	0	2	6	0	1	3	1	Form	at No. 4
COURSE NAME	Desig	gn of Machine El	ements		1	1	· · · ·	I						
Description	Desig	n machine elemen	ts subject to bending mon	nents, twisting	moments	•								
Description	Design	n a shaft												
			SCH	IEME OF STU	JDY									
		Learning Cont	ent	Teaching – Learning Method	-									Remark
bending viz: Types of Sha	M/I = f/ ofts, Shaf	y = E/R ft materials, Standa	rd Sizes, Design of Shafts	Interactive Classroom teaching, demonstrati on, quiz, assignment	the conte provide h students. conduct a give assi make stu practice h	ents and nandou Teach a quiz gnmen dents their	d it to er will and	8		0		chalk board PPT, book	c d, , text c,	
			SCHEM	E OF ASSES	SMENT									
0			Description of A	ssessment										External / Internal
Theory Ex				sses, design para	ameters of	f a give	en		1()	-		-	External
		ADDI	FIONAL INSTRUCTIO	ONS FOR THI	E HOD/	FACU	JLTY	(IF A	ANY	()	I			
				Nil										
	B COURSE NAME Description Description Description Dending viz: Types of Sha (Hollow and Description	Bhopa COURSE Desig Description Desig Description Desig Introduction to pure bending viz: M/I = f/ Types of Shafts, Shat (Hollow and Solid) u Mathod of	NAME Design of Machine El Description Design machine element Description Design a shaft Learning Cont Introduction to pure bending, fundament bending viz: M/I = f/y = E/ R Types of Shafts, Shaft materials, Standar (Hollow and Solid) using strength and r Method of Assessment Theory Exam Student will be asl shaft for given load	Bhopal LEARNING C COURSE NAME Design of Machine Elements Description Design machine elements subject to bending mor Description Design a shaft Description Design a shaft SCH SCH Introduction to pure bending, fundamental equation of pure bending viz: M/I = f/y = E/ R Standard Sizes, Design of Shafts (Hollow and Solid) using strength and rigidity criteria, SCHEM Schement Method of Assessment Description of A Theory Exam Student will be asked to calculate design stress shaft for given loading.	Bhopal LEARNING OUTCOMI COURSE NAME Design of Machine Elements Description Design machine elements subject to bending moments, twisting Description Design a shaft Description Design a shaft SCHEME OF STU SCHEME OF STU Learning Content Teaching – Learning Method Introduction to pure bending, fundamental equation of pure bending viz: M/I = f/y = E/ R Interactive Classroom teaching, demonstrati on, quiz, assignment Types of Shafts, Shaft materials, Standard Sizes, Design of Shafts (Hollow and Solid) using strength and rigidity criteria, Interactive SCHEME OF ASSESS po Method of Assessment Description of Assessment Theory Exam Student will be asked to calculate design stresses, design para shaft for given loading. ADDITIONAL INSTRUCTIONS FOR THI	Bhopal LEARNING OUTCOME M COURSE NAME Design of Machine Elements Design a chine elements subject to bending moments, twisting moments Description Design a shaft SCHEME OF STUDY Description Design a shaft SCHEME OF STUDY Introduction to pure bending, fundamental equation of pure bending viz: M/1 = f/y = E/ R Types of Shafts, Shaft materials, Standard Sizes, Design of Shafts (Hollow and Solid) using strength and rigidity criteria, Teaching, Method Descrip to any momental eaching, demonstrati on, quiz, assignment Bescrip teaching, demonstrati on, quiz, assignment Teacher the come provide I students. Description of Assessment Scheme OF ASSESSMENT Scheme OF ASSESSMENT Description of Assessment Description of Assessment Student will be asked to calculate design stresses, design parameters of shaft for given loading.	Bhopal LEARNING OUTCOME M 0 COURSE NAME Design of Machine Elements Design achine elements subject to bending moments, twisting moments. Design machine elements subject to bending moments, twisting moments. Description Design a shaft SCHEME OF STUDY Design of Machine elements subject to bending moments, twisting moments. Description of Process Description Design a shaft SCHEME OF STUDY Introduction to pure bending, fundamental equation of pure bending viz: M/I = f/y = E/ R Interactive Classroom treaching, demonstrati on, quiz, assignment Teacher will ex the contents and provide handou students. Teach conduct a quiz give assignment make students. Types of Shafts, Shaft materials, Standard Sizes, Design of Shafts (Hollow and Solid) using strength and rigidity criteria, Students and provide handou students. Teach conduct a quiz give assignment make students practice their knowledge Description of Assessment Student will be asked to calculate design stresses, design parameters of a give shaft for given loading. ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACCU	Bhopal LEARNING OUTCOME M 0 2 COURSE NAME Design of Machine Elements Design machine elements subject to bending moments, twisting moments. Design machine elements subject to bending moments, twisting moments. Design machine elements subject to bending moments, twisting moments. Description Design machine elements subject to bending moments, twisting moments. Description of T-L Description Design a shaft SCHEME OF STUEV Introduction to pure bending, fundamental equation of pure bending viz: M/I = f/y = E/ R Interactive Classroom teaching, demonstration, quiz, assignment Teacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignments to make students practice their knowledge Vypes of Shafts, Shaft materials, Standard Sizes, Design of Shafts Students materials, standard Sizes, Design of Shafts Teacher will conduct a quiz and give assignments to make students practice their knowledge vovide handout to slobid using strength and rigidity criteria, Description of Assessment Student will be asked to calculate design stresses, design parameters of a given shaft for given loading. b. Method of Assessment Student will be asked to calculate design stresses, design parameters of a given shaft for given loading. ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY	BhopalLEARNING OUTCOMEM026OURSE NAMEDesign of Machine ElementsDesign achine elements subject to bending moments, twisting moments.DescriptionDesign machine elements subject to bending moments, twisting moments.DescriptionDesign machine elements subject to bending moments.DescriptionDesign a shaftSCHEME OF STUDYTeaching - Learning MethodDescription of T-L ProcessTeaching - ProcessBescription of T-L ProcessReprocessHIntroduction to pure bending, fundamental equation of pure bending viz: M/1 = f/y = E/R (Hollow and Solid) using strength and rigidity criteria,Interactive Classroom assignmentInteractive classroom assignmentTeacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignments to make students practice their knowledgeMDescription of AssessmentDescription of AssessmentStudent will be asked to calculate design stresses, design parameters of a given shaft for given loading.MI Theory ExamStudent will be asked to calculate design stresses, design parameters of a given shaft for given loading.M	Bhopal LEARNING OUTCOME M 0 2 6 0 COURSE NAME Design of Machine Elements Design achine elements subject to bending moments, twisting moments. Description Design achine elements subject to bending moments, twisting moments. Description Design a shaft Description of T-L Teaching – Learning Method Description of T-L Teaching – Process Teaching - Process Description of T-L Teach Hrs. Introduction to pure bending, fundamental equation of pure bending viz: M/I = f/y = E/ R Interactive Classroom Interactive Classroom Teacher will explain the contents and provide handout to students. Teacher will conduct a quiz and give assignment on give assignment to students practice their knowledge 8 SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT SCHEME OF ASSESSMENT Addit for given loading.	Bhopal LEARNING OUTCOME M 0 2 6 0 1 COURSE NAME Design of Machine Elements Design of Machine Elements Subject to bending moments, twisting moments. Description Design a shaft SCHEME OF STUDY Teaching Learning Method is conduct a quiz and give assignment Description of T-L Process Teach Process Process Teach Process Process Process O 0 A 0 Scheme Conduct a quiz and give assignment is conduct a quiz and give assignment is naveled to calculate design stresses, design parameters of a given is aft for given loading. M 0 2 6 0 1 Observation of the stress of the stres of the stress of the stress of the stres	RGPV (Diploma Wing) Bhopal SCHENIE FOR LEARNING OUTCOME Descuine Loar Course Lo	SCHEME FOR Bhopal prant correct Consection Course Correct Consection Course Correct Correct Course Correct Correct Course Correct Correct Course Correct Correct Course Correct Course Co	Refer (Diploma Wing) Bhopal Course Code Code <th< td=""></th<>

]	RGPV (Dip	oma Wing)	SCHE	ME FOR	В	ranch Co	de	С	ourse Co	de	CO Code	LO Code		4
	Bho	•	LEARNIN	G OUTCOME		0	2	6	0	1	3	2	Format	No. 4
CO	URSE NAME	Design of Machine	e Elements		1	1								
COI	Description	Design machine eler	ments subject to ben	ding moments, twistin	ig mome	ents.								
LOI	Description	Design keys, coupl	ings											
		·		SCHEME OF STU	DY									
S. No		Learning Conter	nt	Teaching – Learning Method	Descr	iption Proce		L	Teach Hrs.		Pract. Fut Hrs	5. I	LRs Required	Remark
	Keyways on stren	Keys (Rectangular and ngth of shaft, Design o ted type Flange Coupli	f Couplings – Muff	Interactive Classroom teaching, demonstration, quiz	Teache the con provide student conduc make s practice knowle	ntents a e hand ts. Tea et a qui tudent e their	and out to cher w z to s		7	0		c b P b	Iandouts, halk oard, PT, text ook, harts,	
			SCI	HEME OF ASSESS	MENT									
S. No	D. Method of Assessment		Description	ı of Assessment				N	/laxin Marl			esou equi		External / Internal
	Theory Exam	Student will be as key/coupling for §		n stresses, design parar	neters gi	iven			10				Paper H Scale	External
		ADDI	FIONAL INSTRU	CTIONS FOR THE	HOD/	FACU	JLTY	(IF	ANY)				
				Nil										
				Nil										

R	GPV (Dip	oloma Wing)	SCHEME F	OR	B	ranch Co	ode	C	Course C	ode	CO Code	LO Cod	le	1
	Bh	opal	LEARNING OUT	COME	M	0	2	6	0	1	4	1	Form	at No. 4
COU	RSE NAME	Design of Machine	Elements											
CO D	escription	Select a power screw,	, spur gear for given applicatio	n.										
LO De	escription	Select a power screw f	for given application											
			SCHEM	E OF STUD	Y									
S. No.		Learning (Content	T-L Method		cripti L Pro		T-	Tea Hr		Pract /Tut H		LRs Require	ed Remarl
	Screws, Rela overcome the of power scree	tive merits and demerits read friction, Self-lockir	ad Profiles used for power s of each, Torque required to ag and overhauling. Efficiency aduced, Design of Screw Jack;	Interactive Classroom teaching, demonstra tion, quiz, assignmen t	the co provi stude will c and g assig stude	her wi ontent de har ents. Te conduc give nment ents pra know]	s and idout t eacher et a qu s to m actice	o iz	7		0		Handout chalk board, PPT, tex book, charts,	
			SCHEME O	F ASSESSN	IENT							1		
S. No.	Method of Assessment		Description of Assess	sment					Max M	kimu arks			urces iired	External / Internal
	Theory Exam	Students will be asked parameters for given	ed to select a power screw by cal conditions.	culating requi	red des	sign				10	Pa	uestio per - ating		External
		ADDI	TIONAL INSTRUCTIONS	FOR THE I	IOD/	FAC	ULTY	(IF	ANY	Z)				
				Nil										

RG	SPV (Dip	loma Wing)	E FOR LEARNING			anch Co	ode	C	Course Code C			LO Code		
				OUTCOME			0	2	6	0	1	4	2	Format No. 4
COU	RSE NAME	<u> </u>										1		
CO D	escription	Select a power scre	ew, spur gear for g	given application.										
LO De	escription	Select a suitable spu	r gear for given ap	plication.										
				SCHEME (OF STUDY									
S. No.		Learning Conte	nt	T-L Method	-	Description of T-L Process			Teac Hrs				LR: Requi	
	static beam s	sign considerations, L strength of spur gear to capacity of spur gear	eeth, Power	Interactive Classroom teaching, demonstration, quiz, assignment	explain the provide handout he students will practice.			6	0	0		Handou chalk bo PPT, cha	ard,	
				SCHEME OF A	ASSESSMEN	Т								
S. No.	Method o Assessme		Descripti	ion of Assessment			N	Maximum Marks		Resources			equire	d External / Internal
	Paper-Pen T		e asked to select a s catalogue/data boo	spur gear for a given k.	application usi	ng	10)		Test Paper + Rating Scale				Internal
	1	AD	DITIONAL INS	STRUCTIONS FO	OR THE HOD)/ FA(CUL	ГҮ (IF AN	Y)				I
				Term	Work									

RGPV (Diploma Wing) SC				CHEME FOR LEARNING Branch Code				Code	C	Course Co	ode CO Code		e Code		
Bhopal				OUTCOME $M = 0$					6	6 0		5	1	Format No. 4	
CO	URSE NAME	Design of Mach	ine Ele	ements					I				11		
COI	Description	Design bolted jo	ints, we	lded joints, springs											
LOI	Description	Design bolted join	nts, weld	ded joints for given loadin	ıg.										
				SCHE	ME OF STUDY										
S. No.	Learning Content			Teaching – Learning Method Description of T			f T-L Process		Teach Hrs.	Pract. /Tut Hrs.		-	LRs Require	d Remark	
	Stresses in Screwed fasteners, Bolts of Uniform Strength, Design of Bolted Joints subjected to eccentric loading, Design of Parallel and Transverse fillet welds, axially loaded symmetrical section, Merits and demerits of screwed and welded joints.			Interactive Classroom teaching, demonstration, quiz	Teacher will exp contents and pro to students. Tea conduct a quiz t students practice knowledge	ıt	7	0		ch PF	andouts, alk board T, text ok, chart				
				SCHEME	OF ASSESSMI	ENT									
S. No.	Method of Assessmen			Description of Assessment					Maximu m Marks			Resources Required		External / Internal	
	Theory Exam	Students will loading.	be askec	l to design (a) a bolted joi	int (b) a welded jo	a welded joint for given					-	estion Paper + ting Scale		External	
		AD	DITIO	NAL INSTRUCTION	S FOR THE H) / DC	FACU	LTY	(IF Al	NY)					
					Nil										

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code				Course Co	le	CO Code	LO Code	For	ormat No. 4	
					M	0	2	6	0	1	5	2		offinat No. –	
	URSE NAME	Design	of Machine H												
CO Des	scription	Design	bolted, welded	joints, springs											
LO Des	scription	Calcula	te dimensions o	f a spring under give	en loading f	or a give	en appl	ication	•						
				SCH	EME OF	STUD	Y								
S. No.	Learnii	ng Conte	ent	T-L Method	on of T-L Process		SS	Teach Hrs.			LRs . Required		Remark		
	Applications of Spr terminology, Mater Stresses in springs, factor, Deflection o stored in springs, D Tension and Compr subjected to uniforr I.C. engine valves, Railway buffers, Le	Design of springs: Classification and Applications of Springs, Spring terminology, Materials and Specifications, Stresses in springs, Wahl's correction factor, Deflection of springs, Energy stored in springs, Design of Helical, Tension and Compression springs subjected to uniform applied loads. like I.C. engine valves, Weighing balance, Railway buffers, Leaf springs- Construction and Application			Teacher will explain the contents and provide handout to students. The students will learn through practice.					7 0			Handouts, chalk board, PPT, text book, charts,		
S. No. Method of Assessment				Description of		n r			axi ım rks	Resources Required			d	External / Internal	
	Theory Exam		Students will b given loading f		of a spr	ing und	ler	10	Q	uestion cale	ion Paper + Rating			External	
	<u> </u>		ADDITION	AL INSTRUCTIO	ONS FOR	THE H	(OD/ 1	FACU	LTY ((IF AN	Y)			I	
					Nil										