RG	PV (Diplo	oma Wing) Bhopal		R LEARNING	Bi	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	` -	U / I	OUTO	COME	R	0	1	4	0	1	1	1	
	URSE ME	STRENGTH OF	MATERIALS			<u> </u>		-			-	1	
CO Des	cription	Calculate stresses,	strain and strain energy.										
LO Des	cription	Draw stress strain	diagram for a given mate	erial.									
		1		SCHEME O	F STU	DY							
S. No.	Lea	rning Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		ract. 1t Hrs.	I	.Rs Re	quired		Remarks
1	Simple stresses and strains viz. tensile, compressive, Shear, Crushing, Thermal, fatigue stresses and strains, Hook's Law, Stress- Strain curve for ductile material and brittle material.Interactive classroom teaching, demonstration, quiz, assignments, tutorialTeacher w the conter provide h students. conduct a quiz/tutor students p knowledg					4		NIL	PPT,	,	halk boar ook, chart		
				SCHEME OF A	SSESS	MENT							
S. No.	Meth	od of Assessment	Description of A	Assessment		kimum arks			Resour	ces Re	quired		External / Internal
1	F	Paper pen test	Student will be asked strain diagram for a g			05		Τe	est pape	er + Rat	ing scale		Internal
	1		ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	JLTY (I	IF ANY	<i>(</i>)			
				Part of prog	gressive	e I							

RG	PV (Diple	oma Wing) Bhopal	SCHEME FOR		Bi	ranch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	× 1	8/ I	OUTC	OME	R	0	1	4	0	1	1	2	
	URSE ME	STRENGTH OF	MATERIALS			<u> </u>							1
CO Des	cription	Calculate stresses,	strain and strain energy.										
LO Des	cription	Calculate stresses,	strains, elastic constants,	principal stresses	and str	rains for	a give	en condi	ition.				
		1		SCHEME O	F STU	DY							
S. No.	Lea	rning Content	Teaching –Learning Method	Description o Process		Teach Hrs.		Pract. ut Hrs.	Ι	.Rs Re	quired		Remarks
1	Constant Poisson' Modulus Volumet between Problem Stresses Hook's I constants	f Safety, Elastic s, Lateral Strain, s ratio, Bulk , Shear Modulus, ric Strain. Relation elastic constants s on Direct and Linear Strains, Law elastic s. Principal stresses ns. Mohr's Circle.	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will ex the contents an provide handou students. Teach will conduct assignments/ quiz/tutorial to students practic their knowledg	d ats to her make ce	6		NIL	LRs Required Handouts, chalk board, PPT, text book, charts, video film.			·	
			1	SCHEME OF A	SSESS	MENT							
S. No.	Meth	od of Assessment	Description of A	ssessment		kimum arks			Resour	ces Re	quired		External / Internal
1	,	Theory exam	Student will be asked to given properties for a ground condition.			10		Que	estion pa	aper + 1	rating scal	le	External
			ADDITIONAL INSTI	RUCTIONS FO	R THE	HOD/	FACU	ULTY (IF ANY	<i>(</i>)			,
				NI	Ĺ								
				1 (1)									

RG	PV (Diplo	ma Wing) Bhopal	SCHEME FO		Br	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
			OUTC	COME	R	0	1	4	0	1	1	3	
	URSE ME	STRENGTH OF	MATERIALS								-		,
CO Des	scription	Calculate stresses,	strain and strain energy.										
LO Des	cription	Calculate strain end	ergy under given loading	for a given object	t.								
	I			SCHEME O	F STU	DY							
S. No.	Lear	ning Content	Teaching –Learning Method	Description of Process	T-L	Teach Hrs.		ract. 1t Hrs.	I	.Rs Re	quired		Remarks
1	energy or resilience resilience strain e following i) Gradua ii) Sudde iii) Imp	cases: ally applied load, nly applied load, pact/shock load; problems based	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will exp the contents and provide handout students. Teacher conduct assignm quiz/tutorial to n students practice knowledge.	ts to er will nents/ nake	6		NIL		text bo	halk boar ook, chart	·	
				SCHEME OF A	SSESS	MENT							
S. No.	Metho	od of Assessment	Description of A	Assessment		timum arks			Resour	ces Re	quired		External / Internal
1	Pa	aper pen test	Student will be asked strain energy under gi a given object.			05		Te	est pape	r + Rat	ing scale		Internal
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	JLTY (IF ANY	()			
				Part of prog	gressive	I							

RG	PV (Diplo	oma Wing) Bhopal		E FOR LEAR	NING	Br	anch (Code	C	ourse C	ode	CO Code	LO Code	Format No. 4
	` -			OUTCOME		R	0	1	4	0	1	2	1	
	URSE ME	STRENGTH OF M	ATERIALS											
CO Des	cription	Perform mechanical	testing of mater	als.										
LO Des	cription	Describe an appropri	ate test method	for a mechanica	l property	y of a gi	ven m	aterial.						
	-			SCH	IEME O	F STU	DY							
S. No.		Learning Conter	nt	Teaching – Learning Method		ption o Process	f T-L	Te: H	ach rs.	Pract /Tut Hrs.		LRs Req	uired	Remarks
1	creep, du malleabil toughnes Destructi test, shea torsion te Non- des testing, u electroma testing, a	cal properties of mater actility, elasticity, hardu- lity, plasticity, strength s, endurance limit, ve testing , tensile test r test bending test, hard est, impact test fatigue tructive testing method ltrasonic testing, radio agnetic testing, magnet coustic emission testing	ness, , stiffness, , compression dness test, test, ds, visual graphy testing, tic particle g, liquid	Interactive classroom teaching, demonstratio n, quiz, assignments, tutorial	Teacher the con provide student will con assignn quiz/tut student their kn	tents an handou s. Teacl nduct nents/ corial to s practions owledg	d uts to ner make ce e.		ΠL	09	bo bo	andouts, c pard, PPT, pok, chart m, lab ma	, text s, video	
				SCHEM	IE OF A	SSESS	MENT	۱						
S. No.	Meth	od of Assessment	Description	on of Assessme	nt					Resour	ces Re	quired		External / Internal
1		ooratory test by observation	ssessment Description of Assessment Marks Resources Required v test by Student will be asked to select an Observation schedule/check list (rating							Internal				
			ADDITIONAL	INSTRUCTIO	ONS FOI	R THE	HOD/	FACU	LTY (IF ANY	<u>/</u>)			
				Pa	art of La	b Work	2							

RG	PV (Diplor	na Wing) Bhopal	SCHEME FO		Br	anch Co	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	× •		OUTC	COME	R	0	1	4	0	1	2	2	
	URSE ME	STRENGTH OF M	ATERIALS		<u> </u>	'					·		
CO Des	cription	Perform mechanical	testing of materials.										
LO Des	cription	Perform a given dest	ructive/ non-destructiv	e test for a given	naterial	•							
	I			SCHEME O	F STU	DY							
S. No.	Le	earning Content	Teaching – Learning Method	Description of Process	T-L	Teach Hrs.		ract. 1t Hrs.	I	LRs Re	quired		Remarks
1	compression bending te test, impact Non- destr methods, we ultrasonic testing, ele magnetic p acoustic en	te testing , tensile test on test, shear test est, hardness test, tors et test fatigue test, ructive testing visual testing, testing, radiography ectromagnetic testing particle testing, mission testing, liqui- testing, leak testing	classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will exp the contents and provide handour students. Teacher conduct assignm quiz/tutorial to r students practice knowledge.	ts to er will nents/ nake	NIL		36	PPT,	text bo film,	halk boar ook, chart lab		
				SCHEME OF A	SSESS	MENT							
S. No.	Metho	d of Assessment	Description of A	Assessment		imum arks			Resour	ces Re	quired		External / Internal
1	No. Method of Assessment Description of Assessment Marks Resources Required Laboratory test by Student will be asked to perform a 30 Observation schedule/check-list /rat							/rating	External				
	I		ADDITIONAL INST				FACU	ULTY (IF ANY	Y)			1
				Part of end pra	actical e	xam							

RG	PV (Diplo	oma Wing) Bhopal	SCHEME FO		Bı	ranch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	× 1	87 I	OUTC	COME	R	0	1	4	0	1	3	1	
	URSE ME	STRENGTH OF	MATERIALS		I	1		-	-	-		1	
CO Des	cription	Draw SFD and BM	ID for a given beam unde	er loading.									
LO Des	cription	Describe types of l	oad, shear force, bending	moment acting o	on beam	ıs.							
		1		SCHEME O	F STU	DY							
S. No.	Lea	rning Content	Teaching –Learning Method	Description of Process	f T-L	Teacl Hrs.		Pract. ut Hrs.	I	.Rs Re	quired		Remarks
1	Bending beams ca supporter fixed bea acting on load, unit	n-Shear Force and Moment, types of antilever, simply d, overhanging and ams, types of load a beams- point formly distributed formly varying	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will exp the contents and provide handour students. Teacher conduct assignm quiz/tutorial to r students practice knowledge.	ts to er will nents/ make	4		NIL	PPT,	,	halk boar		
				SCHEME OF A	SSESS	SMENT							
S. No.	Meth	od of Assessment	Description of A	Assessment		kimum arks			Resour	ces Re	quired		External / Internal
1Theory examStudent will be asked to describe shear force, bending moment, types of load acting on a given beam.5Question paper + rating scale							e	External					
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	J LTY (IF ANY	()			1
				NI									

RG	SPV (Diplo	oma Wing) Bhopal	SCHEME FOR OUTC			anch Co			urse C		CO Code	LO Code	Format No. 4
	URSE	STRENGTH OF			R	0	1	4	0	1	3	2	
	scription	Draw SFD and BM	ID for given beam under	loading									
	cription		pending moment diagram		r a give	n loading	r condit	ion					
	cription	Didw shear lorce, t	Sending moment diagram	SCHEME O	0		Sconar	.1011.					
S. No.	Lea	rning Content	Teaching –Learning Method	Description o Process		Teach Hrs.		act. Hrs.	L	.Rs Re	quired		Remarks
1	important to draw s and b diagram- Maximum Point of 0 its i shear for moment Cantileve Supporte	Concept of m bending moment, Contra-flexure and mportance-Drawing orce and bending diagram for	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will ex the contents an provide handou students. Teach will conduct assignments/ quiz/tutorial to students practic their knowledg	d uts to ner make ce	10	N	IL		text be	halk boar		
				SCHEME OF A	SSESS	MENT			·				
S. No.	Meth	od of Assessment	Description of A	ssessment		timum arks			Resour	ces Re	quired		External / Internal
1		Theory exam	Student will be asked of force, bending momen beam under a given los condition.	t diagram for a		15		Ques	stion pa	iper + 1	rating sca	le	External
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/ I	FACUL	LTY (I	F ANY	<u>/)</u>			
				NI									

RG	PV (Dipla	ma Wing) Bhopal	SCHEME FOI		Br	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	- · (F	FF	OUTC	OME	R	0	1	4	0	1	4	1	-
	JRSE ME	STRENGTH OF M	MATERIALS					1				1	1
CO Des	cription	Calculate bending s	tresses for a given beam										
LO Dese	cription	Explain bending str	esses, modulus of sectio	n and bending eq	uation.								
				SCHEME C)F STU	DY							
S. No.	Lear	ming Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		ract. 1t Hrs.	Ι	.Rs Re	quired		Remarks
1	beams, resistance (without section hollow re and hollo	moment of e, Bending equation proof) Modulus of	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	MethodProcessHrs./Tut Hrsractive classroom ning, onstration, quiz, gnments, tialTeacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.4NILHandouts, chalk board, PPT, text book, charts, video film.						·			
				SCHEME OF A	SSESS	MENT							
S. No.	Metho	od of Assessment	Description of A	ssessment		imum arks			Resour	ces Re	quired		External / Internal
1	Т	heory exam	Student will be asked bending stresses, mod for given sections and equation.	ulus of section		6		Τe	est pape	er + Rat	ing scale		External
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	LTY (IF ANY	()			
				NI	L								

RG	PV (Diplo	oma Wing) Bhopa		R LEARNING	Bi	ranch C	ode	Co	urse C	ode	CO Code	LO Code	Format No. 4
	× 1	8/ I	OUTC	COME	R	0	1	4	0	1	4	2	
	URSE ME	STRENGTH OF	MATERIALS					I	-	-		1	
CO Des	scription	Calculate bending	stresses for a given beam	1.									
LO Des	cription	Express relation b	between bending stress and	d radius of curvatu	ure.								
		·		SCHEME O)F STU	DY							
S. No.	Lear	rning Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		Pract. Fut Hrs.	I	.Rs Re	quired		Remarks
1	in theory bending, relation to stress and	ion, assumptions of simple bending stress, between bending d radius of e (formula only).	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will exp the contents and provide handout students. Teacher conduct assignm quiz/tutorial to n students practice knowledge.	ts to er will nents/ make	4		NIL	PPT,		halk boar ook, chart	·	
				SCHEME OF A	SSESS	SMENT							
S. No.	Meth	od of Assessment	Description of A	Assessment		kimum arks]	Resour	ces Re	quired		External / Internal
1		Assignment	Student will be asked simple bending to exp between bending stres curvature.	press relation		05			Rubrics	s/rating	scales		Internal
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FAC	ULTY (I	F ANY	()			
				Term v	work								

RG	PV (Diplo	oma Wing) Bhopal	SCHEME FO		Bı	ranch (ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	- · (F	F	OUTC	COME	R	0	1	4	0	1	4	3	
	URSE ME	STRENGTH OF	MATERIALS			1			_	1		1	
CO Des	cription	Calculate bending	stresses for a given beam	l.									
LO Des	cription	Calculate slope, de	eflection, flexural strengtl	n of a given beam.									
		1		SCHEME O	F STU	DY							
S. No.	Lear	ming Content	Teaching –Learning Method	Description of Process	T-L	Teacl Hrs.		Pract. ut Hrs.	I	.Rs Re	quired		Remarks
1	deflection of cantile	on of slope, n, flexural strength ever and simply d beams for point UDL.	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will exp the contents and provide handout students. Teacher conduct assignm quiz/tutorial to r students practice knowledge.	s to er will nents/ nake	8		NIL	PPT,	,	halk boar ook, chart	· · ·	
	1			SCHEME OF A	SSESS	MENT			1			I	
S. No.	Metho	od of Assessment	Description of A	Assessment		kimum arks			Resour	ces Re	quired		External / Internal
1	P	aper pen test	Student will be asked to deflection, flexural st beam under given load	rength of a given		10		Te	Resources Required Test paper + Rating scale				Internal
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FAC	ULTY (IF ANY	<u>Z)</u>			
				Part of prog									

RG	PV (Diplo	oma Wing) Bhopal	SCHEME FOI OUTC		Br	anch Co	ode		ourse C		CO Code	LO Code	Format No. 4
001	UDGE	1	0010	UME	R	0	1	4	0	1	4	4	
	URSE ME	STRENGTH OF	MATERIALS										
CO Des	cription	Calculate bending s	stresses for a given beam										
LO Des	cription	Calculate stresses u	using bending equation of	n a given beam.									
				SCHEME O	F STU	DY							
S. No.	Lea	rning Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		ract. t Hrs.	I	.Rs Re	quired		Remarks
1	Constant Poisson's Modulus Volumet between Problems Stresses Hook's I constants and strain	rning ContentMethodf Safety, ElasticInteractive classroomts, Lateral Strain,teaching,s ratio, Bulkdemonstration, quiz,s, Shear Modulus,assignments,tric Strain. Relationtutorialelastic constantss on Directand Linear Strains,Law elastics. Principal stressesins. Mohr's Circle,s on bending		Teacher will exp the contents and provide handout students. Teacher conduct assignm quiz/tutorial to r students practice knowledge.	ts to er will nents/ nake	8	N	NIL	PPT,	,	halk boar	· · ·	
				SCHEME OF A	SSESS	MENT							
S. No.	Meth	od of Assessment	Description of A	Assessment		imum arks]	Resour	ces Re	quired		External / Internal
1	No.Method of AssessmentDescription of AssessmentMarking MarksResources Required1Theory examStudent will be asked to calculate stresses using bending equation on a given beam.14								External				
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/ I	FACU	LTY (I	F ANY	()			
				NII									

RG	PV (Diploma	a Wing) Bhopal	SCHEN	ME FOR LEARNING OUTCOME Branch Code Course Code Code Code Code R 0 1 4 0 1 5 1 Idar shafts and springs Idar shafts Id		LO Code	Format No. 4							
	- · (I	······································		OUTCO	ME	R	0	1	4	0	1	5	1	
	URSE ME	TRENGTH OF I	MATERIALS				<u> </u>			_			1	1
CO Des	cription C	alculate design pa	arameters of circu	ılar shafts a	and springs									
LO Des	cription C	alculate design pa	arameters of a giv	ven shaft.										
					SCHEME O	F STU	DY							
S. No.	Learnii	ng Content	Teaching –Lea Method		-	T-L				I	.Rs Re	quired		Remarks
1	shaft: Calcu M.I. for soli shafts; Assu	on; Derivation ion $\partial/L;$ Problems on aft based on	Interactive class teaching, demonstration, c assignments, tutorial.	quiz, p st c q st st	ne contents and rovide handout tudents. Teache onduct assignn uiz/tutorial to r tudents practice	s to er will nents/ nake	8	0		PPT,	text be		·	
				SC	CHEME OF A	SSESS	MENT							
S. No.	Method	of Assessment	Descript	ion of Ass	essment					Resour	ces Re	quired		External / Internal
1	The	ory exam	entDescription of AssessmentMaximum MarksResources RequiredStudent will be asked to calculate design parameters a given shaft.10Test paper + Rating scale							External				
			ADDITIONA	L INSTRU	UCTIONS FO	R THE	HOD/	FAC	ULTY (IF ANY	<i>(</i>)			
					NII									

RGPV (Diploma Wing) Bhopal			I	SCHEME FOR LEARNING		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				OUTCOME			0	1	4	4 0	1	5	2	
COURSE NAME STRENGTH O		OF MATERIALS												
CO Description Calculate design			parameters of circular shafts and springs											
LO Des	cription Exp	olain springs, it	s class	ification and stiffne	ess of a spring.									
	i				SCHEME O	F STU	DY							
S. No.	Learning	Learning Content		ching –Learning Method	ning Description o Process		T-L Teach Hrs.		Pract. ut Hrs.	LRs Require		quired	l Remarks	
1	Classification of springs: Nomenclature of closed coil helical spring; Deflection formula for closed coil helical spring (without derivation); stiffness of spring.		teach dem	onstration, quiz, nments,	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments, quiz/tutorial to make students practice thei knowledge.		5		NIL	Handouts, chalk board, PPT, text book, charts, video film.			·	
					SCHEME OF A	SSESS	MENT							
S. No.	Method of	of Assessment Description of Assessment		Maximum Marks			Resources Required					External / Internal		
1	Quiz		Student will be asked to explain springs, its classification and stiffness of a spring.		05			Rubrics/rating scales					Internal	
	-		AD	DITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	J LTY (IF ANY	<i>Z</i>)			
					Term v	vork								

RGPV (Diploma Wing) Bhopal			SCHEME FOR LEARNING		Branch Code			Course Code			CO Code	LO Code	Format No. 4	
			OUTCOME			0	1	4	0	0 1 5				
	URSE ME	STRENGTH OF	MATERIALS		-				-	-	- I			
CO Des	scription	Calculate design pa	arameters of circular shaf	ts and springs										
LO Des	cription	Calculate design pa	arameters of a given sprin	ıg.										
		1		SCHEME O	F STU	DY								
S. No.	Lea	rning Content	Teaching –Learning Method	ing Description of Process		Teach Hrs.	Pract. /Tut Hrs.		LRs Required				Remarks	
1	strength and Numeric closed co find safe	al Problems to comparison of and weight of solid hollow shafts. al problems on bil helical spring to load, deflection, oil and number of	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		8	0		Handouts, chalk board, PPT, text book, charts, video film.			·		
				SCHEME OF A	SSESS	MENT								
S. No.	Meth	od of Assessment	Description of A	ssessment	Maximun Marks		Resourc		ces Required		External / Internal			
1	Theory exam		Student will be asked to calculate design parameters a given spring.			10		Te	est pape	st paper + Rating scale			External	
	I		ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FAC	ULTY (IF ANY	Y)			1	
				NII										