RGPV (	(DIPLO BHO	OMA W PAL	ING)		CULUM FOR THE DURSE	FORMA	T-3	Sheet No. 1/3								
Branch			Mee	chanical Engineer	ing	Semester		V								
Course	Code	50	1	Course Name	Theor	y of Machin	ies									
Course (	Outcon	ne 1	Expla	in mechanisms an	d its inversions.		Teach Hrs	Marks								
Learning	g Outco	ome 11	Define struct		with mechanisms and	1	06	05								
Contents	Contents <u>Method of Assessment</u> Learning Outcome 12			Definitions-Theory of Machine, Kinetics, Statics, Dynamics, Kinematics ,Difference between kinematics and dynamics, Rigid and resistant bodies, link or element-Types of links, Kinematic pair and its classification, Types of constrained Motions, Degrees of freedom, Kinematic chain, Non kinematic chain, redundant chain, Linkage, Mechanism, structure& super structure, Inversion of mechanism, Definition of Machine, Difference between Machine and Structure												
Method	of Asse	essment	Quiz (	Part of term work)												
Learning	g Outco	ome 12	-	-	k, Double slider crank sions with neat sketches		10	10								
Contents	Contents			Classification of mechanism- (1)4- bar mechanism and its inversions(2) Slider crank chain mechanism and its inversions (a) Reciprocating engine, Reciprocating compressor (b) Whitworth quick return mechanism, Rotary Engine (c) Oscillating cylinder engine, crank and slotted lever mechanism (d) Hand pump, (3) Double slider crank chain – (a) Elliptical Trammel (b) Scotch yoke (c) Oldham's coupling.												
Method	of Asse	essment	Paper pen test (Part of progressive test I)													
Learning	g Outco	ome 13	Identify elements, type of pairs and their motions of 4 bar, Slider0610crank, Double slider crank mechanisms and its inversions.10													
Contents	5		Demonstration of link, element-Types of links, Kinematic pair and its classification.(1)4- bar mechanism and its inversions(2) Slider crank chain mechanism and its inversions (a) Reciprocating engine, Reciprocating compressor (b) Whitworth quick return mechanism, Rotary Engine (c) Oscillating cylinder engine, crank and slotted lever mechanism (d) Hand pump, (3) Double slider crank chain – (a) Elliptical Trammel (b) Scotch yoke (c) Oldham's coupling													
Method	of Asse	essment														
Course (	Course Outcome 2			a suitable transmiss	application	Teach Hrs	Marks									
Learning	Learning Outcome 21			Explain belt, rope and chain drive with their applications and selection criteria.1010												
Contents	8		Belt and rope Drive – Construction and working, Open & Cross Belt drive, length of belt, compound belting, velocity ratio, slip & creep, material for belts, angle of lap, flat belt, V– belt(Rope), Centrifugal tension and Initial tension; Condition for maximum power transmission Ration of friction tension for flat and v belt; Chain Drives – Construction and working, Advantages & Disadvantages; Selection of Chain & Sprocket wheels													

Method of Assessment	End Semester Theory Exam		
Learning Outcome 22	Explain gear and gear train with their applications and selection criteria	8	10
Contents	Gear Drives – Construction and working, Spur gear terminology; Typ gear trains, their selection for different applications; Train value & Vo compound, reverted and simple epicyclic gear train; Law of gearing		
Method of Assessment	End Semester Theory Exam		
Learning Outcome 23	Solve numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive.	4	10
Contents	numerical problems on length of belt/rope, velocity ratio, slip & maxi transmission for belt, rope, chain and gear drive,	mum pow	er
Method of Assessment	End Semester Theory Exam		
Course Outcome 3	Construct a cam profile for a given follower and given follower displacement.	Teach Hrs	Marks
Learning Outcome 31	Explain different cams and followers with neat sketch	6	10
Contents	Definition and application of Cams and Followers; Classification of C Followers, Definition- terms associated with cam profile and follower follower motions and their displacement diagrams		nent,
Method of Assessment	End Semester Theory Exam		
Learning Outcome 32	Construct a displacement diagram for a given follower motion	02+06	10
Contents	follower motions and their displacement diagrams for uniform veloc acceleration and Retardation.	ity, SHM	uniform
Method of Assessment	Laboratory test by observation (End semester practical exam	ination)	
Learning Outcome 33	Construct a cam profile for a given follower using follower displacement diagram .	02+06	10
Contents	Drawing of profile of radial cam with knife-edge and roller followe offset with reciprocating motion (graphical method).	r with and	l without
Method of Assessment	Laboratory test by observation( Part of Lab Work)		
Course Outcome 4	Describe brakes, dynamometers, flywheels and governors	Teach Hrs	Marks
Learning Outcome 41	Explain construction and working of a given brake or dynamometer	08	10
Contents	Brakes- Function of brakes, Types of brakes, Construction and v brake, ii) Band Brake, iii) Internal expanding shoe brake, Simple nun shoe brake dynamometer- Introduction, types- Prony brake dynamo dynamometer, Belt Transmission Dynamometer, Bevis-Gibson Tors Comparison between brakes and dynamometers	nerical on meter, Ro	band and pe brake
Method of Assessment	Paper pen test (Part of progressive test II)		
Learning Outcome 42	Describe construction and working of a given flywheel or governor	08	10
Contents	Flywheel - Concept, function and applications of flywheel with the he moment diagram of an IC engine, Governors- Introduction, Types of governor(Centrifugal, Watt and Porter), Terminology of Governors, s stability, Isochronism, Hunting, Effort and power of governor, Compa Flywheel and Governor	ensitivene	ess,

Method of Assessment	End Semester Theory Exam		
Learning Outcome 43	Measure the brake power transmitted by a shaft using a given dynamometer	01+06	10
Contents	brake power Prony brake dynamometer, Rope brake dynamometer, Dynamometer, Bevis-Gibson Torsion Dynamometer	Belt Tran	smission
Method of Assessment	Laboratory test by observation (End semester practical exam	ination)	
Course Outcome 5	Explain vibration, noise control and balancing	Teach Hrs	Marks
Learning Outcome 51	Explain terms associated with vibration, noise control and balancing	04	10
Contents	Free, Damped, Forced vibrations, period, cycle, frequency, Resonanc Vibration- Longitudinal, Transverse& Torsional vibration, intro to r		f
Method of Assessment	End Semester Theory Exam		
Learning Outcome 52	List causes of vibration in machines, their harmful effects and remedies	03	10
Contents	Causes of vibrations in machines; their harmful effects and remedies		
Method of Assessment	End Semester Theory Exam		
Learning Outcome 53	List causes of noise in machine, techniques used to reduce noise in machine	03	05
Contents	causes of noises in machine, techniques used to reduce noise in mach	ine	
Method of Assessment	Quiz (Part of term work)		
Learning Outcome 54	Calculate the resultant balancing mass for a given rotating mass system using graphical method.	02+04	10
Contents	Balancing: Concept of balancing; Static and Dynamic balancing E rotating mass; Graphical method for balancing of several masses plane		
Method of Assessment	Laboratory test by observation (Part of lab Work)		

RG	RGPV (Diploma Wing ) Bhopal	SCHEME FOR		Bra	nch C	Code	Co	ourse (	Code	CO Code	LO Code	Format No. 4	
_		8, 1	OUTCO	ME	M	0	2	5	0	1	1	1	
	URSE ME	Theory of machine			-		1						-
CO Des	cription	Explain mechanisms an	d its inversions.										
LO Des	cription	Define terms associate	d with mechanisms and str	ucture.									
	_	1		SCHEME O	F STUI	DY							
S. No.	Le	earning Content	Teaching – Learning Method	Description of Process		Tea Hr		Pract. Hr		I	.Rs Requ	ired	Remarks
1	Kinetics, S Kinematic kinematic and resist element-T pair and it constraine freedom, kinematic Linkage, N super stru mechanis Machine,	s-Theory of Machine, Statics, Dynamics, ss, Difference between ss and dynamics, Rigid ant bodies, link or Types of links, Kinematic ts classification, Types of ed Motions, Degrees of Kinematic chain, Non chain, redundant chain, Aechanism, structure& acture, Inversion of m, Definition of Difference between and Structure		Teacher will end the contents ar provide hando students. Teach will conduct assignments/ quiz/tutorial to students practi their knowledg	nd uts to her o make ce	00	5	NI	L	board	louts, cha l, PPT, te s, video f	xt book,	
			S	CHEME OF AS	SSESSI	<b>MEN</b> T	ר						
S. No.	Method of Assessment Description of As		sessment		ximur Iarks	n		Resou	irces R	equired		External / Internal	
1		Quiz	Student will be asked to five terms associated with and structure.	-				1	Test pap	per + R	ating scale	e	Internal
		1	ADDITIONAL INSTR	UCTIONS FOR	<b>THE</b>	HOD/	FACU	ULTY (	IF AN	<b>Y</b> )			
				Part of Terr	n Work								

	RGPV (Diploma Wing ) Bhop	scheme for		Br	anch Co	de	Co	urse C	ode	CO Code	LO Code	Format No. 4	
	(	<b>I I I I I I I I I I</b>	OUTC	OME	M	0	2	5	0	1	1	2	
	URSE ME	Theory of machine				I		1	1	1			1
CO Des	cription	Explain mechanisms a	and its inversions										
LO Des	cription	Explain 4 bar, Slider ci	rank, Double slider crank me	echanisms and its i	nversior	ns with ne	at sket	tches					
		1		SCHEME O	F STUI	DY							
S. No.	Lea	rning Content	Teaching –Learning Method	Description o Process	f T-L	Teach Hrs.		ract. 1t Hrs.	L	Rs Re	quired		Remarks
1	(1)4- bar n inversions mechanis (a) Recipr Reciproca Whitwort mechanis Oscillating crank and mechanis Double sli Elliptical	Methodation of mechanism- r mechanism and its ns(2) Slider crank chain ism and its inversions procating engine, cating compressor (b) rth quick return ism, Rotary Engine (c) ng cylinder engine, nd slotted lever ism (d) Hand pump, (3) slider crank chain – (a) I Trammel (b) Scotch Oldham's coupling.Interactive classroom teaching, demonstration, quiz, assignments, tutorial		Teacher will ex the contents an provide handou students. Teach will conduct assignments/ quiz/tutorial to students praction their knowledg	d uts to ner make ce	10	ſ	NIL		text bo	halk boar ook, chart	·	
	1		S	CHEME OF AS	SSESSN	MENT			-				
S. No.	Metł	od of Assessment	Description of A	ssessment		imum arks		]	Resour	ces Re	quired		External / Internal
1	Paper pen test construction and wo		Student will be asked to construction and workin mechanism/inversion v sketches	to Explain ng of a given		10		Ques	stion pa	iper + 1	ating sca	le	Internal
			ADDITIONAL INSTR	<b>UCTIONS FOR</b>	R THE	HOD/ F.	ACUI	LTY (II	F ANY	)			
				Part of progre	ssive te	st I							

R	RGPV (Diploma Wing ) Bhopal	SCHEME FOI		Br	anch Co	ode	Co	urse C	ode	CO Code	LO Code	Format No. 4	
		······································	OUTC	COME	M	0	2	5	0	1	1	3	
	URSE ME	Theory of machine			I				1	1		1	1
CO Des	cription	Explain mechanisms ar	nd its inversions										
LO Des	cription	Identify elements, type	e of pairs and their motion	s of 4 bar, Slider cr	ank, Dou	ıble slide	r cranl	k mechai	nisms ar	nd its in	versions.		
				SCHEME O	F STUI	DY							
S. No.	Lea	arning Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		Pract. ut Hrs.	L	.Rs Re	quired		Remarks
1	mechanis (a) Rec Reciproca Whitwort mechanis Oscillating crank a mechanis Double sl Elliptical	Types of links, c pair and its ion.(1)4- bar m and its s(2) Slider crank chain m and its inversions ciprocating engine, iting compressor (b) h quick return m, Rotary Engine (c)	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	MethodProcessctive classroomTeacher will exing,the contents annstration, quiz,provide handouiments,students. Teach		NIL		06	PPT,	text bo	halk board ook, charts models.	·	
	-			SCHEME OF A	SSESSI	MENT							
S. No.	Meth	nod of Assessment	Description of A	ssessment		imum arks		]	Resour	ces Re	quired		External / Internal
1	1 Laboratory test by observatio		Student will be asked to Identify elements, type of pairs and their motions in a given mechanism/inversions.			10	C				heck-list models	/rating	External
			ADDITIONAL INSTR	<b>RUCTIONS FOI</b>	R THE	HOD/ F	ACU	LTY (I	FANY	)			
			Da	rt of end semeste	r practi	ol ovom							

RG	RGPV (Diploma Wing ) Bhopal SCHEM			E FOR LEAR	NING	Br	anch C	ode	C	ourse C	ode	CO Code	LO Code	Format No. 4
		ing / ing / znopu		OUTCOME		M	0	2	5	0	1	2	1	
	URSE ME	Theory of machine	2								-			1
CO Des	cription	Select a suitable tran	smission system fo	r a given applicat	ion									
LO Des	cription	Explain belt, rope and	d chain drive with t	heir applications	and selec	tion crit	eria.							
				SCH	IEME O	F STU	DY							
S. No.		Learning Conte	ent	Teaching – Learning Method	Descri I	-		-	ach rs.	Pract /Tut Hrs.		LRs Req	luired	Remarks
1	Open & C compoun material f belt(Rope Condition Ration of Drives –C	ope drive – Construction ross Belt drive, length of d belting, velocity ration for belts, angle of lap, fl ), Centrifugal tension a for maximum power t friction tension for flat construction and workin rages; Selection of Chai	Interactive classroom teaching, demonstratio n, quiz, assignments, tutorial	Process Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.				0		bo bo	andouts, c pard, PPT, pok, chart; m, lab ma	, text s, video		
	1			SCHEM	E OF A	SSESS	MENT							
S. No.	Meth	od of Assessment	Descripti	on of Assessme	nt		imum arks			Resour	ces Re	quired		External / Internal
1	]	Theory Exam	asked to explain orking of a given o on/selection crite	drive		10		Que	estion pa	iper + 1	rating sca	le	External	
			ADDITIONAL	INSTRUCTIO	ONS FOI	R THE	HOD/	FACU	LTY (	IF ANY	<u>/</u> )			
				Part of end se	mostort	haam		·.						

RG	RGPV (Diploma Wing ) Bhopal	SCHEME FO		Br	anch C	ode	Co	ourse C	ode	CO Code	LO Code	_ Format No. 4	
COI	JRSE				M	0	2	4	0	1	2	2	
	ME	Theory of machine											
CO Des	cription	Select a suitable trans	mission system for a give	en application									
LO Des	cription	Explain gear and gear	train with their application	ons and selection c	riteria								
				SCHEME O	<b>)F STU</b>	DY							
S. No.	]	Learning Content	Description of Process				Pract. ut Hrs.	I	LRs Re	quired		Remarks	
1	working, 5 Types of g their sele applicatic Velocity r reverted a	es – Construction and Spur gear terminology; gears and gear trains, ction for different ons; Train value & atio for compound, and simple epicyclic gea v of gearing	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.		08		NIL	PPT,	text bo film, l	halk boar ook, chart ab	· /	
	1			SCHEME OF A	SSESS	MENT			_			I	
S. No.	Meth	od of Assessment	<b>Description of</b> A	Assessment		timum arks			Resour	ces Re	quired		External / Internal
1	ŗ	l to Explain and selection drive/train.		10		Que	stion pa	aper + 1	rating scal	le	External		
			ADDITIONAL INST	<b>RUCTIONS FO</b>	R THE	HOD/	FACU	ULTY (	IF ANY	Y)			
			Part	of end semester	theory	examin	ation						

Non-       Learning Content       Teaching - Learning of belty rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive, chain and gear	3	Code	CO Code	ode	urse C	Co	de	anch Co	Br		SCHEME FOR	RGPV (Diploma Wing ) Bhopal	RG				
NAME       Theory of machine         CO Description       Select a suitable transmission system for a given application.         LO Description       Solve numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gea         S. No.       Learning Content       Teaching -Learning Method       Description of T-L Process       Teach       Pract. Hrs.       LRs Required         1       numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive,       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.       A       NIL       Handouts, chalk board, PPT, text book, charts, video film.         S. No.       Method of Assessment       Description of Assessment       Maximum       Resources Required		3	2	1	0	4	2	0	M	OME	OUTC	87 I	× 1				
LO Description       Solve numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear         S. No.       Learning Content       Teaching -Learning Method       Description of T-L Process       Teach Hrs.       Pract. /Tut Hrs.       LRs Required         1       numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive,       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.       NIL       Handouts, chalk board, PPT, text book, charts, video film.         S. No.       Method of Assessment       Description of Assessment       Maximum       Resources Required			1			1	I	I				Theory of machine					
SCHEME OF STUDY         S. No.       Learning Content       Teaching -Learning Method       Description of T-L Process       Teach Hrs.       Pract. /Tut Hrs.       LRs Required         1       numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive,       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.       NIL       Handouts, chalk board, PPT, text book, charts, video film.         S. No.       Method of Assessment       Description of Assessment       Maximum       Resources Required										n application.	nission system for a give	Select a suitable trans	cription	CO Des			
S. No.       Learning Content       Teaching -Learning Method       Description of T-L Process       Teach Hrs.       Pract. /Tut Hrs.       LRs Required         1       numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive,       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.       NIL       Handouts, chalk board, PPT, text book, charts, video film.         S. No.       Method of Assessment       Description of Assessment       Maximum       Resources Required	ar drive.	and gear	e, chain a	belt, rop	ion for l	nsmissi	wer tra	kimum pov	p & max	e, velocity ratio, sli	ms on length of belt/rop	Solve numerical probl	cription	LO Des			
S. No.       Learning Content       Method       Process       Hrs.       /Tut Hrs.       Lks Kequired         1       numerical problems on length of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive,       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.       NIL       Handouts, chalk board, PPT, text book, charts, video film.         S. No.       Method of Assessment       Description of Assessment       Maximum       Resources Required								DY	F STUI	SCHEME O							
of belt/rope, velocity ratio, slip & maximum power transmission for belt, rope, chain and gear drive,       teaching, demonstration, quiz, assignments, tutorial       the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.       PPT, text book, charts, video film.         S. No.       Method of Assessment       Description of Assessment       Maximum	Remarks		quired	.Rs Rec	L				T-L	-	No. Learning Content Method						
S No. Method of Assessment Description of Assessment Maximum Resources Required				text bo	PPT,	ΠĹ	N	4	s to r will ents/ nake	the contents and provide handout students. Teache conduct assignm quiz/tutorial to r students practice	eaching, emonstration, quiz, ssignments,	ope, velocity ratio, t iximum power c sion for belt, rope, 2	of belt/rc slip & ma transmiss	1			
No Method of Assessment Description of Assessment Required								MENT	SSESS	SCHEME OF A							
1Vidi K5	External / Internal		quired	ces Rec	Resour	F				ssessment	Description of A	od of Assessment	Meth	S. No.			
1       Student will be asked to solve a         1       Theory exam         1       Numerical problem on length of belt or rope/velocity ratio/ slip/maximum         10       Question paper + rating scale         10       Question paper + rating scale         10       drive/train.	External	le	ating scal	aper + ra	stion pa	Ques		10		ength of belt or /maximum	Theory exam Theory		1				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)	· · · ·			<u>(</u> )	F ANY	TY (I	ACUL	HOD/ F	R THE	RUCTIONS FO	ADDITIONAL INST						
Part of end semester theory examination																	

RG	RGPV (Diploma Wing ) Bhopal		OR LEARNING COME	Bi	ranch C	ode	C	ourse C	ode	CO Code	LO Code	_ Format No. 4	
	URSE	Theory of machine			M	0	2	4	0	1	3	1	
	ME												
CO Des	cription	Construct a cam prof	file for a given follower ar	nd given follower dis	placem	ent.							
LO Des	cription	Explain different carr	ns and followers with near	t sketch .									
				SCHEME O	F STU	DY							
S. No.	Lear	ming Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		Pract. Fut Hrs.	I	LRs Re	quired		Remarks
1	Cams Classificat Followers associated and follo follower	and Followers; ion of Cams and Definition- terms	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will ex the contents and provide handou students. Teach will conduct assignments/ quiz/tutorial to students practic their knowledg	d its to her make ce	06		NIL	PPT,	,	halk boar ook, chart	·	
				SCHEME OF A	SSESS	SMENT							
S. No.	Metho	od of Assessment	Description of	Assessment		kimum arks			Resour	ces Re	quired		External / Internal
1	ך 	Theory exam	Student will be asked classification and appli cams/follower			10		Que	stion pa	aper + 1	ating scal	le	External
			ADDITIONAL INST	<b>FRUCTIONS FO</b>	R THE	HOD/	FAC	ULTY (	IF ANY	Y)			
			Part	of end semester	theory	examin	ation	1					

RG	RGPV (Diploma Wing ) Bhopal	1	SCHEME FOI	–	Bı	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4	
	- · (	······································	-	OUTC	COME	M	0	2	4	0	1	3	2	
	URSE ME	Theory of machin	ne							1			1	1
CO Des	cription	Construct a cam pro	ofile fo	r a given follower and	l given follower dis	placem	ent							
LO Des	cription	Construct a displace	ement	diagram for a given f	ollower motion									
		1			SCHEME O	F STU	DY							
S. No.	Lear						Teach Hrs.		ract. 1t Hrs.	Ι	.Rs Re	quired		Remarks
1	displacem uniform v	ent diagrams for elocity, SHM, cceleration and	teacl dem	ning, onstration, quiz, gnments,	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	02		06	PPT,	,	halk boar ook, charts	·	
					SCHEME OF A	SSESS	MENT							
S. No.	Metho	od of Assessment		Description of A	ssessment		kimum arks			Resour	ces Re	quired		External / Internal
1		poratory test by observation	dis	udent will be asked placement diagram f lower motion.			10	C	bservat		edule/c es /rub	heck-list , rics	/rating	External
			AD	DITIONAL INST	RUCTIONS FOI	R THE	HOD/	FACU	JLTY (I	IF ANY	<i>(</i> )			
					Part of end pra	ctical e	exam							

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME			ode	C	ourse (	Code	CO Code	LO Code	Format No. 4		
_		8) I	OU	TCOME	M	0	2	4	0	1	3	3	
	URSE ME	Theory of machin	ne			<u> </u>				-	_		
CO Des	scription	Construct a cam pro	ofile for a given follower	and given follower dis	placem	ent							
LO Des	cription	Construct a cam pro	ofile for a given follower	using follower displace	ement c	liagram							
				SCHEME O	F STU	DY							
S. No.	Lea	rning Content	Teaching –Learnir Method	ng Description of Process	f <b>T-L</b>	Teach Hrs.		Pract. Fut Hrs.	]	LRs Re	quired		Remarks
1	Drawing of profile of radial cam with knife-edge and roller follower with and without offset with reciprocating motion (graphical method).		Interactive classroom teaching, demonstration, quiz, assignments, tutorial	ve classroom Teacher will ex , the contents and provide handou				06	PPT.	,	halk boar ook, chart		
				SCHEME OF A	SSESS	MENT							
S. No.	Meth	od of Assessment	Description	of Assessment		kimum arks			Resour	ces Re	quired		External / Internal
1		ooratory test by observation	Student will be ask cam profile for a giv follower displaceme	en follower using		10	(	Observat		edule/c es /rub	heck-list rics	/rating	Internal
			ADDITIONAL IN	STRUCTIONS FO	R THE	HOD/	FAC	ULTY (	IF AN	Y)			
				Part of La	b Worl	ζ.							

RGPV (Diploma Wing ) Bhopa			1	SCHEME FOR LEARNING OUTCOME			anch C	ode	Co	Course Code			LO Code	Format No. 4
				OUTCOME			0	2	4 0		1	4	1	
	URSE ME	Theory of machin	ne				· · ·					·	·	·
CO Des	cription	Describe brakes, dy	lynamometers, flywheels and governors											
LO Des	O Description Explain construct			ing of a given bra	ke or dynamomete	er								
					SCHEME O	F STU	DY							
S. No.	Learning Content			ng –Learning ⁄Iethod	Description of Process	f <b>T-L</b>	Teach Hrs.		ract. 1t Hrs.	L	.Rs Re	quired		Remarks
1	brakes,Ty Construct i) shoe br iii) Interna brake, Sin band and dynamom types-Pro dynamom Transmiss Bevis-Gib Dynamon	neter, Rope brake neter, Belt sion Dynamometer, son Torsion neter, Comparison brakes and	Interactive classroom teaching, demonstration, quiz, assignments, tutorialTeacher will the contents a provide hand students. Tea conduct assig quiz/tutorial the contents a		the contents and provide handour students. Teach conduct assignm quiz/tutorial to students practice	ts to er will nents/ make	8	NIL		Handouts, chalk board, PPT, text book, charts, video film.				
					SCHEME OF A	SSESS	MENT							
S. No.	Meth	od of Assessment	Γ	Description of A	ssessment		imum arks		]	Resour	ces Re	quired		External / Internal
1	F	Paper pen test Student will be asked to construction and working brake or dynamometer		•		10		Test paper + Rating			ing scale		Internal	
			ADDI	FIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	LTY (I	FANY	<u>(</u> )			
					Part of progre	ssive tes	st II							

RG	PV (Diplo	ma Wing ) Bhopal	SCHEME FOI		Br	anch Co	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4			
_		8) I	OUTC	M	0	2	4	0	1	4	2					
	URSE ME	Theory of machin	ne			<u> </u>			1		-	1				
CO Des	cription	Describe brakes, dy	kes, dynamometers, flywheels and governors													
LO Des	cription	Describe construction	tion and working of a given flywheel or governor													
				SCHEME O	<b>F STU</b>	DY										
S. No.	. Learning Content		Teaching –Learning Method	<b>e e i</b>				ract. 1t Hrs.	I	LRs Re	quired		Remarks			
1	and applica with the he moment d engine, Go Introductio governor(C and Porter Governors stability, Is Hunting, E governor, C	Concept, function ations of flywheel elp of turning iagram of an IC overnors- on, Types of Centrifugal, Watt T), Terminology of , sensitiveness, sochronism, ffort and power of Comparison lywheel and	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	ive classroom Teacher will expla g, the contents and provide handouts		8		NIL	Handouts, chalk board, PPT, text book, charts, video film.							
			·	SCHEME OF A	SSESS	MENT										
S. No.	Metho	d of Assessment	Description of A	ssessment		timum arks		]	Resour	ces Re	quired		External / Internal			
1	Т	Theory exam Theory exam (a)function and applica with the help of turn diagram of a give (b)construction and wo governor				10		Te	est pape	er + Rat	ing scale		External			
			ADDITIONAL INST		R THE	HOD/	FACU	JLTY (I	IF ANY	<i>X</i> )			1			
				of end semester						*						

RG	RGPV (Diploma Wing ) Bhopal		l	SCHEME FOI		Br	canch C	ode	C	ourse C	ode	CO Code	LO Code	Format No. 4	
		8, <b>I</b>		OUTCOME			0	2	4	0	1	4	3		
	URSE ME	Theory of machin	ne				1						1		
CO Des	cription	Describe brakes, dy	dynamometers, flywheels and governors												
LO Des	cription	Measure the brake	ke power transmitted by a shaft using a given dynamometer												
		1			SCHEME O	F STU	DY								
S. No.	Learning Content		Tea	eaching –Learning Description of Method Process			Teach Hrs.		Pract. ut Hrs.	Ι	.Rs Re	quired		Remarks	
1	brake power Prony brake dynamometer, Rope brake dynamometer, Belt Transmission Dynamometer, Bevis-Gibson Torsion Dynamometer		Interactive classroom teaching, demonstration, quiz, assignments, tutorial. Teacher will ex the contents and provide handou students. Teach conduct assign quiz/tutorial to students practic knowledge.		Î ts to er will nents/ make		06	06		,	halk board				
	1				SCHEME OF A	SSESS	MENT								
S. No.	Meth	od of Assessment		Description of A	ssessment	Maximum Marks				Resour	ces Re	quired		External / Internal	
1		ooratory test by observation	f f brake newer transmitted in a given			10		(	Observat		edule/c es /rub	heck-list /	External		
			AD	DITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	U <b>LTY</b> (	IF ANY	7)			<u> </u>	
				Р	art of end semeste	er pract	ical exa	n							

RGPV (Diploma Wing ) Bhopal			1	SCHEME FOI		<b>Branch Code</b>			C	ourse C	Code	CO Code	LO Code	Format No. 4	
_		8, <b>I</b>		OUTCOME			0	2	2 4	0	1	5	1		
	COURSE NAMETheory of machine			3									1		
CO Des	cription	Explain vibration, n	oise co	ntrol and balancing											
LO Des	<b>Description</b> Explain terms associated with vibration, noise of				ontrol and balanci	ng									
	I				SCHEME O	F STU	DY								
S. No.	Learning Content		Tea	Ceaching – LearningDescription oMethodProcess			Teacl Hrs.		Pract. /Tut Hrs.	]	LRs Re	quired		Remarks	
1	Free, Damped, Forced vibrations, period, cycle, frequency, Resonance Types of Vibration- Longitudinal, Transverse& Torsional vibration, intro to noise		teach demo assig	teractive classroom eaching, emonstration, quiz, ssignments, ttorial. Teacher will ex- the contents an provide handou students. Teach conduct assignm quiz/tutorial to students practic knowledge.			4		NIL	Handouts, chalk board PPT, text book, charts video film.			·		
					SCHEME OF A	SSESS	MENT								
S. No.	Method	l of Assessment		Description of A	ssessment		kimum arks		<b>Resources Required</b>					External / Internal	
1	Th	neory Exam	apj mu ter	ident will be asked propriate choice giv ltiple choice questions ms associated with violated and balancing.	en in ten ons on the		10		Que	estion p	aper + r	e	External		
			AD	DITIONAL INST	<b>RUCTIONS FO</b>	R THE	HOD/	FA	CULTY (	IF AN	Y)			·	
					of end semester										

RG	RGPV (Diploma Wing ) Bhopal			SCHEME FOI		Br	anch C	ode	C	ourse (	Code	CO Code	LO Code	Format No. 4
		87 I		OUTC	OME	M	0	2	4	0	1	5	2	
	URSE ME	Theory of machin	e											
CO Des	<b>CO Description</b> Explain vibration, noise control and balancing													
LO Description List causes of vibration in machines, their harmful effects and														
		1			SCHEME O	F STU	DY							
S. No.	Lear	ming Content	Tea	ching –Learning Method	Description of Process	f <b>T-L</b>	Teach Hrs.		Pract. ut Hrs.	]	LRs Re	quired		Remarks
1	machines	machines; their harmful teaching, the con- effects and remedies demonstration, quiz, assignments, tutorial conduct quiz/tu studen		Teacher will exp the contents and provide handout students. Teacher conduct assignm quiz/tutorial to r students practice knowledge.	ts to er will nents/ make	3	0			,	halk boar ook, chart	·		
					SCHEME OF A	SSESS	MENT							
S. No.	Metho	od of Assessment		Description of A	ssessment		dimum arks			Resour	ces Re	quired		External / Internal
1	Theory exam			Student will be asked to list causes of vibration in machine and their harmful effects and remedies .			10		Question paper + rating scale					External
			AD	DITIONAL INST	<b>RUCTIONS FO</b>	R THE	HOD/	FAC	ULTY (	IF AN	Y)			
				Part o	of end semester	theorv	examin	ation						

RG	RGPV (Diploma Wing ) Bhopal			SCHEME FOR LEARNING			anch C	ode	C	ourse C	ode	CO Code	LO Code	Format No. 4	
	- · ( <b>r</b>			OUTCOME			0	2	4	0	1	5	3		
	URSE ME	Theory of machin	ie												
CO Des	cription	Explain vibration, no	noise control and balancing												
LO Description List causes of noise in machine, techniques used to reduce noi						n machi	ne								
					SCHEME O	F STU	DY								
S. No.	Lear	ning Content	Tea	ching –Learning Method	T-L	Teach Hrs.		Pract. Fut Hrs.	I	LRs Re		Remarks			
1	causes of noises in machine, techniques used to reduce noise in machine		teach demo	onstration, quiz, nments,	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	3	0		PPT,	louts, c text bo film.	·			
			1		SCHEME OF A	SSESS	MENT								
S. No.	Metho	od of Assessment		Description of A	ssessment	Maximum Marks				Resour	ces Re	quired		External / Internal	
1		Quiz	Student will be asked to List (a)ca of noise in machine (b)techniques to reduce noise in machine .			05			Que	estion pa	aper + 1	cating scal	Internal		
			AD	DITIONAL INST	RUCTIONS FO	R THE	HOD/	FAC	ULTY (	IF ANY	<i>Z</i> )				
					Part of Ter	m Wor	k								

RGPV (Diploma Wing ) Bhopal				SCHEME FOR LEARNING OUTCOME			Branch Code			Co	urse C	urse Code		LO Code	Format No. 4	
	× 1	U / 1		OME	M	0	2	2	4 0 1			5	4			
	URSE ME	Theory of machin	e				<u> </u>		I			-				
CO Des	cription	Explain vibration, no	ise control and bala	ancing												
LO Des	cription	Calculate the resulta	int balancing mass f	for a giv	en rotating mass sy	vstem u	sing grap	hica	l meth	od.						
		1			SCHEME O	F STU	DY									
S. No.	Lea	rning Content	Teaching –Lean Method	rning	Description of Process				Pract /Tut H		I	.Rs Re	quired		Remarks	
1	balancing balancing rotating n method fo	: Concept of ; Static and Dynamic , Balancing of single nass; Graphical or balancing of nasses revolving in ne	Interactive classr teaching, demonstration, q 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	02	0	04		PPT,	,	halk boar ook, char			
					SCHEME OF A	SSESS	MENT									
S. No.	Meth	od of Assessment	Description	on of A	ssessment	Maximum Marks			Resources Required						External / Internal	
1		boratory test by observation	resultant balanci	Student will be asked to calculate the resultant balancing mass for a given rotating mass system using graphical method			10		Observation schedule/ch scales /rubr							
			ADDITIONAL	L INST	<b>RUCTIONS FO</b>	R THE	HOD/	FA(	CULT	Y (I	F ANY	<u>/</u> )				
					Part of La	b Worł	<u> </u>									

#### DIPLOMA IN MECHANICAL ENGINEERING

### SEMESTER: FIFTH SEMESTER

## SCHEME: OCBC

#### COURSE CODE: 501

# NAME OF THE COURSE: THEORY OF MACHINES

## LIST OF SUGGESTED EXPERIMENTS

S.	LO	NAME OF EXPERIMENTS
Ν		
<b>O</b> .		
1	13	Demonstration of construction and working of kinematic link and kinematic pair
		using models/setup.
2	13	Demonstration of construction and working of four bar chain mechanism and its
		inversions using models/setup.
3	13	Demonstration of construction and working of Slider crank mechanism and its
		inversions using models/setup.
4	13	Demonstration of construction and working of Double slider crank mechanism
		and its inversions using models/setup.
5	32	Demonstration of construction and working of cams and followers using
		models/setup.
6	32	Draw displacement diagrams for follower motions for
		(a) uniform velocity
		(b) simple harmonic motion (SHM)
		(c) uniform acceleration and retardation
7	33	Draw a profile of radial cam with knife-edge/ roller follower with /without offset with
		reciprocating motion. (All combinations)
8	43	Measurement of brake power transmitted by a shaft using Prony brake
		dynamometer
9	43	Measurement of brake power transmitted by a shaft using Rope brake
		dynamometer
10	43	Measurement of brake power transmitted by a shaft using Belt Transmission
		dynamometer
11	43	Measurement of brake power transmitted by a shaft using Bevis-Gibson Torsion
		dynamometer
12	54	Balancing of several masses revolving in same plane using graphical method