

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/3
Branch	Mechanical Engineering			Semester	V
Course Code	501	Course Name	Theory of Machines		
Course Outcome 1	Explain mechanisms and its inversions.			Teach Hrs	Marks
Learning Outcome 11	Define terms associated with mechanisms and structure.			06	05
Contents	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 Assessment	Quiz (Part of term work)				
Learning Outcome 12	Explain 4 bar, Slider crank, Double slider crank mechanisms and its inversions with neat sketches			10	10
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 Assessment	Paper pen test (Part of progressive test I)				
Learning Outcome 13	Identify elements, type of pairs and their motions of 4 bar, Slider crank, Double slider crank mechanisms and its inversions.			06	10
Contents	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 Assessment	Laboratory test by observation (Part of end semester practical examination)				
Course Outcome 2	Select a suitable transmission system for a given application			Teach Hrs	Marks
Learning Outcome 21	Explain belt, rope and chain drive with their applications and selection criteria.			10	10
Contents	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; Types of gears and gear trains, their selection for different applications; Train value & Velocity ratio for 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 & maximum power transmission for belt, rope, chain and gear drive,		
Method of Assessment	End Semester Theory Exam		
Course Outcome 3	Construct a cam profile for a given follower and given follower displacement.	<i>Teach Hrs</i>	<i>Marks</i>
Learning Outcome 31	Explain different cams and followers with neat sketch	6	10
Contents	Definition and application of Cams and Followers; Classification of Cams and Followers, Definition- terms associated with cam profile and follower displacement, follower motions and their displacement diagrams		
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 velocity, SHM, uniform acceleration and Retardation.		
Method of Assessment	Laboratory test by observation (End semester practical examination)		
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 follower with and without offset with reciprocating motion (graphical method).		
Method of Assessment	Laboratory test by observation(Part of Lab Work)		
Course Outcome 4	Describe brakes, dynamometers, flywheels and governors	<i>Teach Hrs</i>	<i>Marks</i>
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 working of i) shoe brake, ii) Band Brake, iii) Internal expanding shoe brake, Simple numerical on band and shoe brake dynamometer- Introduction, types- Prony brake dynamometer, Rope brake dynamometer, Belt Transmission Dynamometer, Bevis-Gibson Torsion Dynamometer, Comparison between brakes and dynamometers		
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 help of turning moment diagram of an IC engine, Governors- Introduction, Types of governor(Centrifugal, Watt and Porter), Terminology of Governors, sensitiveness, stability, Isochronism, Hunting, Effort and power of governor, Comparison between Flywheel and Governor		

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, Belt Transmission Dynamometer, Bevis-Gibson Torsion Dynamometer		
Method of Assessment	Laboratory test by observation (End semester practical examination)		
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, Resonance Types of Vibration- Longitudinal, Transverse& Torsional vibration, intro to noise		
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 machine		
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 Balancing of single rotating mass; Graphical method for balancing of several masses revolving in same plane		
Method of Assessment	Laboratory test by observation (Part of lab Work)		

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				<i>M</i>	<i>0</i>	<i>2</i>	<i>5</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>	
COURSE NAME	Theory of machine											
CO Description	Explain mechanisms and its inversions.											
LO Description	Define terms associated with mechanisms and structure.											
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks			
1	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	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.	06	NIL	Handouts, chalk board, PPT, text book, charts, video film.						
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required			External / Internal				
1	Quiz	Student will be asked to define given five terms associated with mechanisms and structure.		05	Test paper + Rating scale			Internal				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Part of Term Work												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2	5	0	1	1	2	
COURSE NAME	Theory of machine												
CO Description	Explain mechanisms and its inversions												
LO Description	Explain 4 bar, Slider crank, Double slider crank mechanisms and its inversions with neat sketches												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	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.	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.	10	NIL	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Paper pen test	Student will be asked to Explain construction and working of a given mechanism/inversion with neat sketches	10	Question paper + rating scale			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of progressive test I													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2	5	0	1	1	3	
COURSE NAME	Theory of machine												
CO Description	Explain mechanisms and its inversions												
LO Description	Identify elements, type of pairs and their motions of 4 bar, Slider crank, Double slider crank mechanisms and its inversions.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Demonstration of link or 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.	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	06	Handouts, chalk board, PPT, text book, charts, video film, models.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Laboratory test by observation	Student will be asked to Identify elements, type of pairs and their motions in a given mechanism/inversions.	10	Observation schedule/check-list /rating scales /rubrics/models	External								
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester practical exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	<i>5</i>	<i>0</i>	<i>1</i>	<i>2</i>	<i>1</i>	
COURSE NAME	Theory of machine												
CO Description	Select a suitable transmission system for a given application												
LO Description	Explain belt, rope and chain drive with their applications and selection criteria.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required						Remarks	
1	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	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.	10		Handouts, chalk board, PPT, text book, charts, video film, lab manual.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Theory Exam	Student will be asked to explain construction, working of a given drive with its application/selection criteria	10	Question paper + rating scale			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	2	2	
COURSE NAME	Theory of machine												
CO Description	Select a suitable transmission system for a given application												
LO Description	Explain gear and gear train with their applications and selection criteria												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
1	Gear Drives – Construction and working, Spur gear terminology; Types of gears and gear trains, their selection for different applications; Train value & Velocity ratio for compound, reverted and simple epicyclic gear train; Law 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	Handouts, chalk board, PPT, text book, charts, video film, lab manual.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				External / Internal				
1	Theory exam	Student will be asked to Explain construction, working and selection criteria of a given gear drive/train.		10	Question paper + rating scale				External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	2	3	
COURSE 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 gear drive.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
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.	4	NIL	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				External / Internal				
1	Theory exam	Student will be asked to solve a numerical problem on length of belt or rope/velocity ratio/ slip/maximum power transmission of a given drive/train.		10	Question paper + rating scale				External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	3	1	
COURSE NAME	Theory of machine												
CO Description	Construct a cam profile for a given follower and given follower displacement.												
LO Description	Explain different cams and followers with neat sketch .												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
1	Definition and application of Cams and Followers; Classification of Cams and Followers, Definition- terms associated with cam profile and follower displacement, follower motions and their displacement diagrams	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.	06	NIL	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				External / Internal				
1	Theory exam	Student will be asked to describe classification and application of a given cams/follower		10	Question paper + rating scale				External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	3	2	
COURSE NAME	Theory of machine												
CO Description	Construct a cam profile for a given follower and given follower displacement												
LO Description	Construct a displacement diagram for a given follower motion												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
1	follower motions and their displacement diagrams for uniform velocity, SHM, uniform acceleration and Retardation.	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.	02	06	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Laboratory test by observation	Student will be asked to construct a displacement diagram for a given follower motion.	10	Observation schedule/check-list /rating scales /rubrics			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end practical exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	3	3	
COURSE NAME	Theory of machine												
CO Description	Construct a cam profile for a given follower and given follower displacement												
LO Description	Construct a cam profile for a given follower using follower displacement diagram												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			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	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/quiz/tutorial to make students practice their knowledge.	02	06	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				External / Internal				
1	Laboratory test by observation	Student will be asked to Construct a cam profile for a given follower using follower displacement diagram		10	Observation schedule/check-list /rating scales /rubrics				Internal				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of Lab Work													

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		M	0	2	4	0	1	4	1	

COURSE NAME	Theory of machine
CO Description	Describe brakes, dynamometers, flywheels and governors
LO Description	Explain construction and working of a given brake or dynamometer

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Brakes- Function of brakes,Types of brakes, Construction and working of i) shoe brake, ii) Band Brake, iii) Internal expanding shoe brake, Simple numerical on band and shoe brake dynamometer- Introduction, types-Prony brake dynamometer, Rope brake dynamometer, Belt Transmission Dynamometer, Bevis-Gibson Torsion Dynamometer, Comparison between brakes and dynamometers	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	NIL	Handouts, chalk board, PPT, text book, charts, video film.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Student will be asked to Explain construction and working of a given brake or dynamometer	10	Test paper + Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of progressive test II

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2	4	0	1	4	2	
COURSE NAME	Theory of machine												
CO Description	Describe brakes, dynamometers, flywheels and governors												
LO Description	Describe construction and working of a given flywheel or governor												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Flywheel - Concept, function and applications of flywheel with the help of turning moment diagram of an IC engine, Governors- Introduction, Types of governor(Centrifugal, Watt and Porter), Terminology of Governors, sensitiveness, stability, Isochronism, Hunting, Effort and power of governor, Comparison between Flywheel and Governor	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	NIL	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Theory exam	Student will be asked to Describe (a)function and application of flywheel with the help of turning moment diagram of a given engine (b)construction and working of a given governor.	10	Test paper + Rating scale			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	4	3	
COURSE NAME	Theory of machine												
CO Description	Describe brakes, dynamometers, flywheels and governors												
LO Description	Measure the brake power transmitted by a shaft using a given dynamometer												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required						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 explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	01	06	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Laboratory test by observation	Student will be asked to determine the brake power transmitted In a given shaft using a given dynamometer.	10	Observation schedule/check-list /rating scales /rubrics			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester practical exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	5	1	
COURSE NAME	Theory of machine												
CO Description	Explain vibration, noise control and balancing												
LO Description	Explain terms associated with vibration, noise control and balancing												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
1	Free, Damped, Forced vibrations, period, cycle, frequency, Resonance Types of Vibration- Longitudinal, Transverse& Torsional vibration, intro to noise	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.	4	NIL	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				External / Internal				
1	Theory Exam	Student will be asked to select an appropriate choice given in ten multiple choice questions on the terms associated with vibration, noise control and balancing.		10	Question paper + rating scale				External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	5	2	
COURSE NAME	Theory of machine												
CO Description	Explain vibration, noise control and balancing												
LO Description	List causes of vibration in machines, their harmful effects and remedies												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
1	Causes of vibrations in machines; their harmful effects and remedies	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.	3	0	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				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				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	5	3	
COURSE NAME	Theory of machine												
CO Description	Explain vibration, noise control and balancing												
LO Description	List causes of noise in machine, techniques used to reduce noise in machine												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks				
1	causes of noises in machine, techniques used to reduce noise in machine	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.	3	0	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required			External / Internal					
1	Quiz	Student will be asked to List (a)causes of noise in machine (b)techniques used to reduce noise in machine .		05	Question paper + rating scale			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of Term Work													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>	4	0	1	5	4	
COURSE NAME	Theory of machine												
CO Description	Explain vibration, noise control and balancing												
LO Description	Calculate the resultant balancing mass for a given rotating mass system using graphical method.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Balancing: Concept of balancing; Static and Dynamic balancing, Balancing of single rotating mass; Graphical method for balancing of several masses revolving in same plane	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.	02	04	Handouts, chalk board, PPT, text book, charts, video film.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Laboratory test by observation	Student will be asked to calculate the resultant balancing mass for a given rotating mass system using graphical method	10	Observation schedule/check-list /rating scales /rubrics			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of Lab Work													

LIST OF SUGGESTED EXPERIMENTS

S. N O.	LO	NAME OF EXPERIMENTS
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