	RGPV(Diplo	maWi	ng)Bhopa	n l		SEM	ESTER	RTEACH	IINGLE	ARNIN	NG&A	SSESSN	MENTPL	AN		FORMAT-6	
NA	MEOF F	PROGI	RAMMI	E THRE	EYEARSE	DIPLO	MA		SCHEME		ОВЕ	E IMPLEMENTINGYEAR			.R	2020-21		
BR	ANCHC	ODE	A03	NAMEOF	BRANCH	I		·	AUTON	/IOBILE	ENGINE	ERING	ì		SEMI	MESTER FOURTH		
			CC	URSEDETA	ILS	·		T-L	PLAN				AS	SESSMEN	TPLAN			
S.			601	IDCE							Internal		ExternalAssessme		nt(Univer	sityExam)	Grand
No	COURSE CODE	COU!		PAPER CODE	No. of	No. of	Total T-L	T-L Hrs. /Week	Asses	Assessment TheoryPaper		per	PracticalEx		am*	Total of		
	CODE			CODE	COs	LOs	Hrs.	•	No.of LOs	Total Marks	No.of LOs	Total Marks	Duration	No.of LOs	Total Marks	Duration	Marks	
1	401	AUTO	ENGINE-	11	6953	05	15	120	08	05	50	07	70	03HRs.	03	30	03Hrs.	150
2	402	AUTO	CHASSIS	-11	6954	05	15	120	08	05	50	07	70	03HRs.	03	30	03Hrs.	150
3	403		CLEBODY NEERING			05	11	90	06	08	40	-	-	-	03	60	03Hrs	100
4	404	BASIC ENGG		HANICAL	6955	04	12	105	07	05	30	07	70	03HRs.	-	-	-	100
5	405		ESSIONAI LOPMEN			03	06	60	04	06	75	-	-	-	-	-	-	75
			TOTAL	_		22	59	495	33	29	245	21	210	-	09	120	-	575
											No	o.ofTheo	ryPapers	03	No.of	PracticalE	xams03	-

^{*}ExamforLOs(Psycho+Affect.)**perbatch of20students

RGPV (Dipl	lama Wing \ Dhanal			Branch Code			Course Code			Code	Л
квеу (рір	loma Wing) Bhopal	OUTCOME	Α	0	3	4	0	2	1	1	Format No. 4
COURSE NAME	AUTO CHASSIS – II										
CO Description	Student will be able to expla	in theory, construction and compone	ents a	about	give	n fro	nt axl	e /St	eering	Syste	em
LO Description Student will be able to explain theory/construction/components/working of front axle & front wheel geometry with help of labeled line diagram							netry with help of a				

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Need of front axle, functions of front axle, loads on front axle, construction details, types of front axle, directional stability, front wheel geometry: castor, camber, king pin inclination, toe-in, and toe-out.	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	5	2	 Automobile Engg. by R.B.Gupta SatyaPrakashan New Delhi W.H. Crouse "Automotive mechanics", Tata McGraw-Hill Publishing Co., New Delhi. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	One theory questions related to the learned content will be asked in the university question paper	10	Question paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DCD//D: 1	la con Martina N Dila con I	SCHEME FOR LEARNING		Branch Code		Course Code		CO Code	LO Code	4	
KGPV (DIPI	oma Wing) Bhopal	OUTCOME	Α	0	3	4	0	2	1	2	Format No. 4
COURSE NAME	AUTO CHASSIS – II										
CO Description	Student will be able to expl	ain theory, construction and compone	ents a	about	t give	n fro	nt axl	e / St	eering	g Syste	em
LO Description Student will be able to explain theory /construction / working / components of Steering System with help of a labeled line 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	Conditions for true rolling, Centre point steering, steering geometry, Ackermann and Davis steering system, construction, working and components of car steering system, constructional details of steering linkages, different types of steering gear boxes, wheel wobble, collapsible steering, and power assisted steering, electronic steering system	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	07	03	 Automobile Engg. Vol.1 by Singh, Kripal Standard publishers New- Delhi Automobile Engg. by R.B.Gupta, SatyaPrakashan, New-Delhi 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Two theory question related to the learned content will be asked in the test paper	10	Test paper Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

В	ranch Coo	le	Co	urse Co	CO Code	LO Code	
Α	0	3	4	0	2	1	3

Format No. 4

COURSE NAME	AUTO CHASSIS – II

CO Description | Student will be able to explain theory, construction and components about given front axle /Steering System

LO Description Student will be able to identify various components of given front axle / steering system

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Study of locations, constructional features and functions of various components of front axles / steering systems	Lab demonstration method	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	05	02	Cut-sectioned/ working models, disassembled front axle and steering system, different components and sub-assemblies	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the students five components in practical examination	10	Cut-sectioned/ working models, disassembled front axle and steering system, different components and subassemblies, rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

- 1- Correctness of identification of first component 2- Correctness of identification of second component 3- Correctness of identification of third component
- 4- Correctness of identification of fourth component 5- Correctness of identification of fifth component

SCHEME FOR LEARNING OUTCOME

В	ranch Coc	le	Co	ourse Co	CO Code	LO Code	
Α	0	3	4	0	2	2	1

Format No. 4

COURSE NAME AUTO CHASSIS – II	COURSE	NAME	AUTO	CHASSIS -	Ш
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CO Description | Student will be able to explain theory, construction and components of the vehicle suspension system

LO Description | Student will be able to explain theory, construction and components of given suspension system with help of line 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	Purpose of suspension, various elements of suspension system, theory and construction of helical and leaf springs, their comparison and uses, spring deflection, spring stiffness, energy stored, principle and construction of torsion bar spring, stabilizers	Traditional Lecture method	Teacher will explain different concepts and descriptions related to contents. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	06	02	 Automobile Engg. Vol.1 by Singh Kripal, Standard publishers N.Delhi Vehicle suspension system and electromagnetic dampers by kashem, Nagarajah Publication Springer 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Two theory questions related to the learned content will be asked in the question paper	10	Question paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING Branch Code Course Code C							
KGPV (DIP	RGPV (Diploma Wing) Bhopal OUTCOME A 0 3 4 0 3 2 2 Format						Format No. 4
COURSE NAME	AUTO CHASSIS – II						
CO Description	Student will be able to explain theory, construction and components of the suspension system						
LO Description	Student will be able to explain various effects of spring-suspension on riding comfort and devices used to neutralize them with help of line diagram						

SCH	EME	OF	STL	JDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teac h Hrs.	Pract /Tut Hrs.	LRs Required	Remarks
1	Principle of shock absorbers, construction and working of telescopic shock absorber, study and comparison of different types of front axle suspension system, effect of driving, braking, side thrust &torque reaction on suspension, Hotchkiss drive & Torque tube drive. Anti squate and antidive system, Concept of air suspension.	Traditional Lecture method	Teacher will explain contents. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	07	03	 Automotive mechanics by William H Crouse, Tata McGraw-Hill Publishing Co., New Delhi Vehicle suspension system and electromagnetic dampers by kashem, Nagarajah Publication : Springer 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Two theory questions related to the learned content will be asked in the test paper	10	Test paper Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

Branch Code			Co	ourse Co	CO Code	LO Code	
Α	0	3	4	0	2	2	3

Format No. 4

COURSE INAIVIE AUTO CHASSIS - II	COURSE NAME	AUTO CHASSIS –	Ш
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CO Description | Student will be able to explain theory, construction and components of the suspension system

LO Description | Student will be able to identify various components of given Suspension System

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Study of locations, constructional features, functions of various components of different types of suspension systems	Lab	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	05	02	Cut-sectioned/ working models, disassembled suspension systems, different components and sub-assemblies	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the students five components in practical examination	10	Cut-sectioned/ working models, disassembled suspension systems, different components and subassemblies, rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

- 1- Correctness of identification of first component 2- Correctness of identification of second component 3- Correctness of identification of third component
- 4- Correctness of identification of fourth component 5- Correctness of identification of fifth component

RGPV (Diploma Wing) Bhopal	RGPV	(Dip	loma	Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

	Branch Co	ode	Co	urse Co	de	CO Code	LO Code
Α	0	3	4	0	2	3	1

Format No. **4**

COURSE NAME	AUTO CHASSIS – II
COOMSE INVINE	70 0 CH 175515 H

CO Description Student will be able to explain theory, construction and components of the Mechanical Brake System

LO Description | Student will be able to explain theory, construction and Component of Mechanical Brake System with help of line 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	Theory of braking Classification of brakes, service & parking brake, theory and construction of disc & drum brakes, mechanical brake actuating system, leading & trailing shoes	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	06	03	 Automobile Engg. Vol.1 by Singh, Kripal Standard publishers New-Delhi Automotive mechanics by William H Crouse, Tata McGraw-Hill Publishing Co., New Delhi 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Two theory questions related to the learned content will be asked in the university question paper		Question paper Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

Branch Code			Course Code			CO Code	LO Code
Α	0	3	4	0	2	3	2

Format No. 4

COURSE NAME	AUTO CHASSIS - II
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CO Description | Student will be able to explain theory, construction and components of the Mechanical Brake System

LO Description Student will be able to explain the difference, merits and limitations of the given Brake system

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Comparison between Disc & Drum brakes, merits and limitations of Mechanical brake actuating system	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	03	01	 Automobile Engg. by R.B.Gupta SatyaPrakashan New Delhi 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	One theory questions related to the learned content will be asked in the test paper	05	Test paper Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	(Diploi	ma Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

	Branch Co	ode	Co	urse Co	de	CO Code	LO Code	
١	0	3	4	0	2	3	3	

Format No. 4

COURSE NAME | AUTO CHASSIS – II

CO Description Student will be able to explain theory, construction and components of the Mechanical Brake System.

Student will be able to identify various components of the Mechanical Brake System. **LO Description**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Study of locations, constructional features, functions of various components of disc and drum brakes, parking brakes and Mechanical brake actuating system	Lab demonstration method	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	04	02	Cut section / Working Models, disassembled braking systems and components of the braking systems	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory Test by Observation	Teacher will ask the student to identify five major components in a group or arrangement of variety of components	10	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

- 1- Correctness of identification of first component 2- Correctness of identification of second component 3- Correctness of identification of third component
- 3- Correctness of identification of fourth component 3- Correctness of identification of fifth component.

RGPV (D	iploma Wing)	SCHEME FOR LEARNING		Branch Code			Course Code		CO Code	LO Code	
Bhopal		OUTCOME	OUTCOME A 0		3	4	0	2	4	1	Format No. 4
COURSE NAME AUTO CHASSIS – II											
CO Description	Student will be able to	explain theory, construction and compone	ents of	the H	ydrauli	c / Pr	eum	atic /	Servo	Brak	e System
LO Description	O Description Student will be able to explain theory, construction and Component of Hydraulic / Pneumatic / Servo Brake System with help of line diagram										
		SCHEME OF STUDY									

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Study of hydraulic, pneumatic and servo brake actuating systems regarding their construction, working and components, brake lining material, brake fluid characteristics, purpose and theory of dual brake system, exhaust brakes, antilock braking, retarders, Eddy current retarders, permanent magnet retarders, hydraulic retarders.	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	10	04	 Automobile Engg. Vol.1 by Singh, Kripal Standard publishers New- Delhi Automotive mechanics by William H Crouse, Tata McGraw-Hill Publishing Co., New Delhi 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S	. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	1	Theory exam	Four theory questions related to the learned content will be asked in the university question paper	20	Question paper Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	Di	oloma	Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

	Branch Co	ode	Co	ourse Co	CO Code	LO Code	
Α	0	3	4	0	2	4	2

Format No. 4

AUTO CHASSIS – II

CO Description

Student will be able to explain theory, construction and components of the Hydraulic / Pneumatic /Servo Brake System

LO Description

Student will be able to explain the difference, merits and limitations of the given Brake system

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1 F	Comparison between hydraulic & Pneumatic / servo brake actuating systems	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	03	02	 Automobile Engg. by R.B.Gupta SatyaPrakashan New Delhi Automotive Braking System. By Thomas W Birch. Publisher : S.Chand (G/L) & Company Ltd; 3rd edition 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	·		Maximum Marks	Resources Required	External / Internal
1	Paper pen test	One theory question related to the learned content will be asked in the test paper	05	Test paper Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	(Diplom	a Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

	Branch Co	ode	Co	ourse Co	de	CO Code	LO Code	
4	0	3	4	0	2	4	3	Format No. 4

COURSE NAME	AUTO CHASSIS – II
CO Description	Student will be able to explain theory, construction and components of the Hydraulic / Pneumatic/ Servo Brake System
LO Description	Student will be able to identify various components of the Hydraulic / Pneumatic / Servo Brake System.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Study of locations, constructional features, functions of various components of Hydraulic/ Pneumatic/ servo brake actuating systems	Lab demonstration	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	06	02	Cut sectioned / Working Models, disassembled the braking systems and components of the braking systems	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory Test by Observation	Examiner will ask the student to identify five major components in a group or arrangement of variety of components	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

1- Correctness of identification of first component 2- Correctness of identification of second component 3- Correctness of identification of third component - Correctness of identification of fourth component - Correctness of identification of fifth component

RGPV (Dipi	oma Wing) Bhopai	OUTCOME	Α	0	3	4	0	2	5	1	Format No. 4
COURSE NAME	AUTO CHASSIS – II										
CO Description	Student will be able to explain theory, construction and working the battery electric and hybrid electric vehicles.										
LO Description	Student will be able to exp	lain theory, construction and Componen	t of e	lectri	and h	nybrio	l Elec	tric V	ehicle	with	help of line

Branch Code

SCHEME FOR LEARNING

diagram

co

Code Code

Course Code

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Environmental concerns with traditional vehicles, need of electric vehicles, benefits of electric vehicles, types of electric vehicles, brief history of electric vehicles, theory, construction and working of battery electric and hybrid electric vehicles*, additional infrastructure needed for transportation system based on electric vehicles	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	10	03	M. Ehsani, Y. Gao, S. Gay and Ali Emadi, Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design, CRC Press, 2005	If necessary teacher will suggest video link, learning resources *two & four wheelers

SCHEME OF ASSESSMENT

S. No	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	One theory questions related to the learned content will be asked in the question paper	10	Question paper	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	Dip	oloma	Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

Branch Code			Co	ourse Co	CO Code	LO Code	
Α	0	3	4	0	2	5	2

Format No. 4

COURSE NAME | AUTO CHASSIS – II

CO Description Student will be able to explain theory, construction and working of the battery electric vehicle and hybrid electric vehicle.

LO Description | Student will be able to explain theory and working of different types of hybrid electric vehicle drive trains

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Introduction to hybrid electric vehicle drive trains, different types of hybrid drive trains, types by degree of hybridization, types by the power source, Architecture of hybrid electric drive trains, Series and parallel hybrid electric drive trains	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	09	03	 Iqbal Husain, Electric and Hybrid Vehicles: Design Fundamentals, CRC Press, Electric and hybrid electric vehicle: By Tom Denton published by Routledge 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	One theory question related to the learned content will be asked in the question paper	10	Question paper	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	(Dip	loma	Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

Branch Code			Course Code			CO Code	LO Code	A
4	0	3	4	0	2	5	3	Format No. 4

COURSE NAME	AUTO CHASSIS – II						
CO Description	tion Student will be able to explain theory, construction and working of the electric and hybrid electric vehicle.						
LO Description	Student will be able to compare electric / hybrid vehicle with traditional engine operated vehicle regarding construction,						
LO Description	working, merits and limitations						

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Comparison of electric / hybrid vehicle* with traditional engine operated vehicle regarding construction, working, merits and limitations, brief case study of commercially available 2/4 wheeled electric hybrid vehicles	Lab demonstration	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher	03	02	M. Ehsani, Y. Gao, S. Gay and Ali Emadi, Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design, CRC Press, 2005	If necessary teacher will suggest video link, learning resources *two and four wheelers

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test + Assessment of short report	(1) Teacher will ask one question related with learned content in the test (5 marks)(2) Teacher will assess the short report submitted by student on commercial 2/4 wheeled hybrid vehicles (5 marks)	10	Teat paper, rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Criteria for assessment of short report: - 1. Extent of quality in study (03 marks) 2. Extent of quality in reporting (02 marks)

SCHEME FOR LEARNING OUTCOME

Branch Code			Co	urse Co	de	CO Code	LO Code	
A	0	3	4	0	1	1	1	F

Format No. 4

COURSE NAME	AUTO ENGINES – II	(DIESEL ENGINES)
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CO Description | Student will be able to explain about theory, construction and components for given diesel engine

LO Description | Student will be able to explain theory/construction/components/working of diesel engine with help of a labeled line 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	Introduction to diesel engine, dual combustion cycle, actual diesel and dual combustion cycles, Types of diesel engines, working principle, construction and operation, Valve timing diagram, significance of firing order, study of engine specifications for LCV, HCV, and SUV	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	08	04	 Automobile Engg. by R.B.Gupta SatyaPrakashan N. Delhi Automobile Engg. by K.K.Jain & Asthana Tata McGraw-Hill Publisher W.H. Crouse "Automotive mechanics", Tata McGraw-Hill Publishing Co., N. Delhi. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

		Marks	Resources Required	External / Internal
Theory exam	Two theory questions related to the learned content will be asked in the	10	Question paper, Check list	External
Th	eory exam	eory exam	learned content will be asked in the 10	learned content will be asked in the 10 Question paper, Check list

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	(Dip	loma	Wing) Bhopal
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SCHEME FOR LEARNING OUTCOME

В	Branch Code		Course Code			CO Code	LO Code	_
1	0	3	4	0	1	1	2	Format No. 4

COURSE NAME	AUTO ENGINES – II (DIESEL ENGINES)							
CO Description	tudent will be able to explain about theory, construction and components for given diesel engine							
LO Description	Student will be able to compare the diesel engine with the 4S petrol engine regarding construction, merits and limitations							

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Comparison of 4S petrol Engine & diesel Engine regarding their construction, merits and limitations.	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	04	03	 Automobile Engg. by R.B.Gupta SatyaPrakashan N. Delhi Automobile Engg. by K.K.Jain & Asthana Tata McGraw-Hill Publisher W.H. Crouse "Automotive mechanics", Tata McGraw-Hill Publishing Co., N. Delhi. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	One theory question related to the learned content will be asked in the test paper	10	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

	LO Code	CO Code	Course Code		le	ranch Cod	Bra	
Format No. 4	3	1	1	0	4	3	0	Α

		OOTCOME									
COURSE NAME	AUTO ENGINES – II (DIESEL	AUTO ENGINES – II (DIESEL ENGINES)									
CO Description	Student will be able to explain about theory, construction and components for given diesel engine										
LO Description	Student will be able to iden	tify various components of diesel engin	es								

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Study of locations, constructional features, functions of various components of diesel engines	Lab demonstration method	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	04	03	Cut-sectioned/ working models, disassembled engines, different components and sub-assemblies	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Laboratory Test by Observation	Examiner will ask the student to identify five engine components	10	Cut-sectioned/ working models/ disassembled engines/ different components and sub-assemblies, Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

- 1- Correctness of identification of first component 2- Correctness of identification of second components 3- Correctness of identification of third component
- 4- Correctness of identification of fourth component 5- Correctness of identification of fifth component.

NGF V (Dipid	onia wing, bilopai	OUTCOME	Α	0	3	4	0	1	1	4	Format No. 🛨
COURSE NAME	AUTO ENGINES – II (DIES	EL ENGINES)									
CO Description	Student will be able to e	Student will be able to explain theory, construction and components about given diesel engine									
LO Description	Student will be able to lo	ocate the position of various compon	ents in r	elatio	n to c	other	com	pone	nts in	the g	iven diesel engine
	system										

Branch Code

Course Code

Code

Code

SCHEME FOR LEARNING

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Location/ relative position of various components in diesel engine assembly	Lab demonstration	Teacher will demonstrate the contents to the students and provide observation tables. Students will complete given observation tables based on their observations.	03	04	Cut-section / working models of diesel engines	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the students to locate the relative position of five different components in relation to other components in the given diesel engine during practical examination	10	Cut-section/ working model of diesel engines, Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

RGPV (Dinloma Wing) Rhonal

1- Correctness of locating the position of first component 2- Correctness of locating the position of second component 3- Correctness of locating the position of third component 4- Correctness of locating the position of fourth component 5- Correctness of locating the position of fifth component.

DCDV/Dist	ana a Mina A Dhanal	SCHLIVIL FOR LLARIVING								Code	Λ
RGPV (Diploma Wing) Bhopal		OUTCOME	Α	0	3	4	0	1	2	1	Format No. 4
COURSE NAME	OURSE NAME AUTO ENGINES – II (DIESEL ENGINES)										
CO Description	Student will be able to exp	tudent will be able to explain combustion process, reasons and remedies for knocking in diesel engines									
LO Description	Student will be able to explain combustion process in diesel engines with help of line diagram										

Branch Code

SCHEME FOR LEARNING

со

Code

Code

Course Code

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Combustion in CI engine, stages of combustion, factors affecting delay period, related line diagrams, Combustion chamber for diesel engines & its different types	Traditional Lecture method	Teacher will explain different concepts and descriptions related to contents. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	04	03	 Sharma & Mathur "Internal Combustion Engines" Dhanpat Rai and sons, N. Delhi Ganesan.V "Internal Combustion Engines", Tata McGraw-Hill Publishing Co., N. Delhi. 	If necessary teacher will suggest video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	One theory questions related to the learned content will be asked in the test paper	10	Question paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing)
Bhopal

SCHEME FOR LEARNING OUTCOME

В	ranch Cod	ch Code Course Code		ch Code		de	CO Code	LO Code
Δ	0	3	4	0	1	2	2	

Format No. **4**

COURSE	NAME	AUTO	ENC

AUTO ENGINES – II (DIESEL ENGINES)

CO Description

Student will be able to explain combustion process, reasons and remedies for knocking in diesel engines

LO Description

Student will be able to explain reasons and remedies for the diesel knock in diesel engines

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Abnormal combustion in diesel engine, Various reasons for diesel knock, effect of engine variables on knocking, important properties of diesel, IS Code for diesel, Cetane number, Fuel additives, remedies for the diesel knock, comparison of detonation and diesel knock	Traditional Lecture method	Teacher will explain different concepts and descriptions related to contents. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	06	03	 Sharma & Mathur "Internal Combustion Engines" Dhanpat Rai and sons, N. Delhi Ganesan.V "Internal Combustion Engines", Tata McGraw-Hill Publishing Co., N. Delhi. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	One theory question related to the learned content will be asked in the test paper	10	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DCDV/Dial	ana Nina Dhanal	SCHEME FOR LEARNING	В	Branch Co	de	(Course	Code	Code	Code						
KGPV (DIPI	oma Wing) Bhopal	OUTCOME	Α	0	3	4	0	1	3	1 Format No. 4						
COURSE NAME	AUTO ENGINES – II (DIESEL	UTO ENGINES – II (DIESEL ENGINES)														
CO Description	Student will be able to explain theory, construction, working and components about fuel injection system used in the given diesel engines															
LO Description	Student will be able to explain theory/construction/working/ components of given fuel supply and injection system for diesel engine with the help of a labeled line 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	Theory of Diesel fuel injection, Description and function of common rail system, different types of fuel injector, rotary pump, types of governors, Types of diesel filters, fuel feed pump. Clean diesel technology, Common Rail Diesel Injection system, Hydraulically Actuated Electronically Controlled Unit Injector, Sensors, actuators and ECU.	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	08	03	 Automobile Engg. Vol.2 by Singh, Kripal Standard publishers New-Delhi Ramalingam, K.K. "I.C. Engines Theory & Practice", Scitech Publisher Chennai W.H.Crouse "Automotive Mechanics" Tata McGraw-Hill Publishing co., New-Delhi 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Two theory questions related to the learned content will be asked in the university question paper	10	Question paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DCDV/Dial	ome Ming \ Dhenel	SCHEME FOR LEARNING Branch Code Code Code Code									
KGPV (DIPIC	oma Wing) Bhopal	OUTCOME	Α	0	3	4	0	1	3	2	Format No. 4
COURSE NAME	AUTO ENGINES – II (DIESEL ENGINES)										
CO Description	Student will be able to explain theory, construction and components about fuel injection system used in the given diesel engines										
LO Description Student will be able to compare the two given fuel injection systems for their construction, merits and limitations											

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Comparison between (a) conventional fuel injection system and CRDI (b) mechanical & electronically controlled diesel injection system, (c) direct injection, multi-port injection and throttle body injection Regarding their construction, merits and limitations	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	6	3	 Automobile Engg. by R.B.Gupta, SatyaPrakashan, New Delhi Ganesan.V "I.C. Engines", Tata McGraw-Hill Publishers., New Delhi, 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper-Pen Test	One theory question related to the learned content will be asked in the test paper	10	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

K	GPV (D	ipioma win	g) SCHEIVIE F	OR LEAKINING		branch Cou	e 	C	ourse Co	ae	Code	Code		Λ
		Bhopal	opal OUTCOME A 0 3 4 0 1 3 3 Format No. 4											
COURS	E NAME	AUTO ENGINES	– II (DIESEL ENGINES)											
CO Des	cription	Student will be engines	able to explain theory, cor	nstruction and compon	ents	about f	uel in	jectic	on sy	stem	used	in the	given di	esel
LO Des	cription	Student will be	able to identify the different	ent components of give	n fue	l supply	and a	injec	tions	syste	m for	diesel	engine	
				SCHEME OF STUD	Y									
S. No.		Contents	Teaching –Learning Method	Description of T-L P	roces	S	each Irs.		ct. /T Hrs.	ut	LRs	s Requ	ired	Remarks
	Study of	location,									- C	4: _		

Branch Code

06

CCHEME EUD I ENDMINIC

LO

• Cut-section /

different

working models,

components and

sub-assemblies

NIL

co

Course Code

03

SCHEME OF ASSESSMENT

Teacher will demonstrate the

Students will practice under

contents to the students.

the guidance of teacher.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the student to identify five different components in the given diesel engine fuel injection system during practical examination	10	Cut-section / working models, different components and sub- assemblies, Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

PCDV/Diploma Wing \

constructional features,

components of different

functions of various

types of fuel injection

system.

1

- 1- Correctness of identification of first component 2- Correctness of identification of second component 3- Correctness of identification of third component
- 4- Correctness of identification of fourth component 5- Correctness of identification of fifth component.

Lab demonstration

method

RGPV (Diploma Wing) Bhopal	RGPV	(Diplom	a Wing) Bhopal
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SCHEME FOR LEARNING

В	Branch Code		e Course Code			CO Code	LO Code	_
			4	0	1	4	1	Format No. 4

		OOTCOIVIL	_ ^			_	•	_	•		
COURSE NAME	AUTO ENGINES – II (DIESEL EN	NGINES)									
CO Description	Description Student will be able to improve the IC engine performance through performance measurement and suggesting additional devices									ng additional	
LO Description	Student will be able to calculate specific fuel consumption, volumetric efficiency, indicated power and dissipation of heat from given test data										

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract/Tut Hrs.	LRs Required	Remarks
1	Specific Fuel Consumption, Volumetric Efficiency, Heat balance sheet, Indicated Power, Dynamometer and its types, study of various tests conducted on dynamometer, methods of calculating various engine performance indicators from given data, simple numerical problems based on use of formula	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	06	02	 Ganeshan V. I.C. Engines Tata Mc-Graw Hill Publishing Co. Ltd. R. K. Rajput A Textbook of Internal Combustion Engines Laxmi Publication Ltd. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory paper	One simple numerical question will be asked in theory paper to calculate the value of engine performance indicator from the given engine test data using the formula	10	Question Paper	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma	Wing)	Bhopal
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SCHEME FOR LEARNING OUTCOME

В	ranch Coc	le	Co	urse Co	de	CO Code	LO Code	
Α	0	3	4	0	1	4	2	

Format No. **4**

COURSE NAME	AUTO ENGINES – II (DIESEL ENGINES)
CO Description	Student will be able to improve the IC engine performance through performance measurement and suggesting additional devices
LO Description	Student will be able toexplain the purpose, theory, construction and working of turbocharger and supercharger with the help diagrams

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract/Tut Hrs.	LRs Required	Remarks
1	Need, purpose of supercharging, turbo-charging, construction & Working of supercharger and turbocharger, types of superchargers and Turbo-chargers, Intercoolers.	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	04	02	 S. Srinivasan "Automotive Mechanics" Tata McGraw-Hill Education W.H.Crouse"Autom otive Mechanics"Tata Mc-Graw Hill Publishing Co. Ltd 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper-pen test	One theory question related to the learned content will be asked in the test paper	10	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING	Branch Code			Course Code			CO Code	LO Code	А
		OUTCOME		0	3	4	0	1	4	3	Format No. 4
COURSE NAME	AUTO ENGINES – II (DIESEL ENGINES)										
CO Description	Student will be able to improve the IC engine performance through performance measurement and suggesting additional										
CO Description	devices										
LO Description	Student will be able tocompare the turbocharger and supercharger for their construction, merits and limitations										

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Comparison between various types of supercharger, between supercharger and turbo-charger, for their construction, merits and limitations	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	04	02	 Anil Chhikara"Automobile Engineering vol-1 " SatyaPrakashan, New Delhi W.H.Crouse& D.L. Anglin "Automotive Mechanics" Tata Mc- Graw Hill Publishing Co. Ltd. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal	
1	Theory exam	One theory question will be asked in the question paper	10	Question paper	External	

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Δ.
				Α	0	3	4	0	1	5	1	Format No. 4
COURSE NAME AUTO ENGINES – II (DIESEL ENGINES)												
CO Description	Student will be able to exp IC engines	plain the require	ements and characto	eristic	s of a	alteri	nativ	e fue	els, lu	ıbrica	nts an	d coolants used in
LO Description	Student will be able to exp	olain the importa	nt characteristics of g	iven a	ltern	ative	fuel	for IC	engi	nes		
SCHEME OF STUDY												
S	Te	aching –		Tea	ch	Pra	rt					

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Need of alternative fuels, Fuel properties, Classification of alternative fuels. Fuels for SI engines such as Compressed Natural Gas (CNG), Liquefied Petroleum Gas (LPG), Biogas and Methanol Fuels for CI engines such as Di-Methyl Ether(DME), Di-Ethyl Ether, bio-diesel, Hydrogen (H2)	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary	06	03	 S.S.Thipse " Alternative Fuels" Jaico Publisher Ramalingam, K.K. "I.C. Engines Theory & Practice", Scitech Publisher Chennai 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

remedial and tutorials

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Two theory questions related to the learned content will be asked in the university question paper	10	Question paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING		Branch Code			Course Code		Code	Code	^
		OUTCOME	Α	0	3	4	0	1	5 2		Format No. 4
COURSE NAME	AUTO ENGINES – II (DIESEL E	AUTO ENGINES – II (DIESEL ENGINES)									
CO Description	Student will be able to explain the requirements and characteristics of alternative fuels, lubricants and coolants used in										
CO Description	IC engines										
LO Description	Student will be able to expla	ain the important characteristics of gi	ven l	ubrica	ant fo	or the	IC E	ngine	:S		

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Need of lubricants, Function of lubricating oil, Properties of lubricants, Types of lubricants, Study of important characteristics of main commercially available lubricants, nomenclature /SAE codes for commercial lubricants	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	04	02	 Ramalingam, K.K. "I.C. Engines Theory & Practice", Scitech Publisher Chennai Jain K.K., Asthana R.B.Automobile EngineeringTata Mc-Graw Hill Publishing Co. Ltd. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Two theory questions related to the learned content will be asked in the university question paper	10	Question paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

Branch Code		Co	urse Co	CO Code	LO Code		
Α	0	3	4	0	1	5	3

Format No. **4**

COURSE NAME	AUTO ENGINES – II (DIESEL ENGINES)
CO Description	Student will be able to explain the requirements and characteristics of alternative fuels, lubricants and coolants used in IC engines
LO Description	Student will be able to explain the important characteristics of the given coolant for the IC engines

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Requirement of coolant, Functions of coolant, Types & Characteristics of Coolant, and their effect on engine cooling, additives, study of characteristics of main commercially available coolants, nomenclature of main commercially available coolants	Traditional Lecture method	Teacher will explain different concepts. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	05	02	 Ramalingam, K.K. "I.C. Engines Theory & Practice", Scitech Publisher Chennai S. Srinivasan "Automotive Mechanics" Tata McGraw-Hill Education 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper-pen Test	Two theory questions related to the learned content will be asked in the university question paper	10	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (DIPLOMA WING)
BHOPAL

OBE CURRICULUM FOR THE COURSE

FORMAT-3

Sheet No. 1/5

	PAL		IHE	COURSE			140. 1	-, -	
Branch		Autom	obile Enginee	ering	Semester	Fo	ourth		
Course Code	404	C	ourse Name	Basics of I	Mechanical	Engineeri	ng-II		
Course Outc	ome 1	Student will be able to calculate values of various parameters					T-L	Marks	
		related	related to flow of water in a pipeline						
		Student will be able to calculate the value of water pressure in a							
Learning Out	come 1	given p	given problem, at any cross-sectional area of the pipe using					05	
		continu	ity equation						
		Importa	ant Properties	of liquid- Viscosity, de	ensity, , spec	ific gravity,	variou	ıs types	
Content	ts	of press	sure – atmospl	heric pressure, gauge	pressure, ab	solute pres	ssure, v	vacuum	
Contents		pressur	e, flow of w	ater in a pipe, con	tinuity equ	ation, simp	ole nu	merical	
		problen	ns based on liq	uid pressure /continu	ity equation				
Method of Ass	essment	Theory	exam						
		Student	Student will be able to calculate the water pressure in a given						
Learning Out	come 2	probler	problem, at a cross section of the pipe through use of simple U-					10	
		tube mercury manometer							
		Need of pressure measurement for water flowing in a pipeline, pressure at any							
		section of pipe in terms of height of water column, various methods of pressure							
Content	ts	measurement, manometer and its types, theory construction and working of							
		simple U tube mercury manometer, procedure for calculating the pressure using							
		U tube mercury manometer							
Method of Ass	essment	Theory	exam						
		Student	t will be able t	o calculate various pa	rameters re	lated to			
Laamaina Out		flowing	water in a giv	en simple problem of	pipe equipp	ed with	10	10	
Learning Out	come 3	Venturi	-meter or Orif	ice-meter or Pitot tub	e using Berr	noulli's	10	10	
		equatio	n						
		Bernou	lli's theorem,	its application, variou	s types of e	energy head	ds, Ber	'noulli's	
		equatio	n, constructio	n and working of Ve	nturi-meter,	Orifice-me	eter ar	nd Pitot	
Content	ts	tube, use of Bernoulli's equation for calculating various parameters related to							
			flowing water in a given simple problem of pipe equipped with Venturi-meter,						
		Orifice-meterand Pitot tube.							
Method of Ass	essment	Theory	exam						

RGPV (DIPLOMA WING)
BHOPAL

OBE CURRICULUM FOR THE COURSE

FORMAT-3

Sheet No. 2/5

BHOPAL			THE COURSE			FORIV	IAI-	No. 2/5		
Branch			Auto	mobile Engi	neering		Semester	F	ourth	
Course	Code	404	l	Course Name Basics of Mechanical Engineering-II						
Course	e Outc	ome 2	draw	ings related	ble to select, o to threads, fa ng related vari	isteners, w	reld joints, p		T-L Hrs	Marks
Learning Outcome 1					ible to select ind fasteners in				08	10
C	ontent	:s	Interi threa bolts	nal – externa ds), sketches & nut (hexa	manent fasten I threads, Left of studs (cap sagonal, square of common ke	hand – rig screws, ma e), sketche	tht hand thr	eads, Single s, set screw	e & mu s), sket	ılti starı tches o
Method	of Ass	essment	Theory exam							
			CI I	- •••					1	
Learnir	ng Outo	come 2			able to draw		-	-	08	05
	ng Outo		pipin Weld symb desig	g and product symbols as ols), weld r nation metho		related var / ASME weld dim ymbol as p	ious symbol (primary sy lensions, pi	s. mbols & s pe-types, s	uppler tandar	mentary rds and
	ontent	:s	pipin Weld symb desig fitting	g and product symbols as ols), weld r nation metho	etion drawing r s per BIS-813 nomenclature, ods, pipe line s	related var / ASME weld dim ymbol as p	ious symbol (primary sy lensions, pi	s. mbols & s pe-types, s	uppler tandar	mentary rds and
C	ontent of Ass	essment	pipin Weld symb desig fitting Theo	g and product symbols as ols), weld remarked in method symbols, pipery exament will be a ance of variation	etion drawing r s per BIS-813 nomenclature, ods, pipe line s	related var / ASME weld dim ymbol as p n. et and exp and value	ious symbol (primary synensions, piper passing flood	mbols & s pe-types, s uid, air, gas	uppler tandar	mentary rds and
Method Learnin	ontent of Ass	essment	pipin Weld symb desig fitting Theo Stude relev simpl Mear limits	g and production symbols as ols), weld reproduction method and release of the production of the produc	ction drawing response per BIS-813 nomenclature, ods, pipe line some ble to interpresious symbols	related var / ASME weld dim ymbol as p n. et and exp and value drawings erent section ng and wel	ious symbol (primary symensions, piper passing flucture) plain the measured in ons, dimensions, dimensions	mbols & s pe-types, s uid, air, gas eaning and the given	uppler tandar , water 12	nentary rds and r, Piping 10

RGPV	(DIPLOMA	WING)
	BHOPAL	

OBE CURRICULUM FOR THE COURSE

FORMAT-3

Sheet No. 3/5

BHOPAL		THE (THE COURSE FORMAT- No			o. 3/5	
Branch		Automobile Engineer	ing	Semester	For	urth	
Course Code	404	Course Name	Basics of	Mechanica	l Engineerin	g-II	
Course Out	tcome 3	Student will be able to apply appropriate methods to enhance the productivity and quality in the industrial activities					Marks
Learning Outcome 1		Student will be able to calculate standard time in the given problem, from given time data gathered through stop watch time					10
		study or work sampling					
Conte	nts	Time study, its importation watch time study and rating, calculation of seither stop watch methods use of formula only	work sampling, obse tandard time from g	rved and sta	andard times, elated data g	perfo	rmance
Method of As	ssessment	Theory exam					
Learning Ou	itcome 2	Student will be able to which fall within two given confidence level normal distribution cur	given specification I, using the standard	limits, con	sidering the	09	05
Conte	nts	Normal distribution cur levels, z-value, use of z applications in statistic of area under the curve	-value tables, calcula al quality control, sin	tion of area	under norma	al curve	e, othe
Method of As	ssessment	Theory exam					
Learning Ou	itcome 3	Student will be able to control limit, and low construct the charts for assessing quality of	ver control limit for or the given data, in	X bar & R	charts, and	09	10
Conte	nts	Quality control in mar process control, process values and their formul actual chart preparati productivity	ss control charts, the lae for X bar & R char	ir types and	I use, UCL, LC	CL, Cen proced	tre-lind

RGPV (DIPLOMA WING) BHOPAL			NG)	OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 4/5	
Branch			Auto	mobile Engineer	ring	Semester		Fourth	
Course Code 404				Course Name	Basics of	Basics of Mechanical Engineering-II			
Method	of Asse	essment	Theo	ry exam					

RGPV (DI	RGPV (DIPLOMA WING)					
BHOPAL						

OBE CURRICULUM FOR THE COURSE

FORMAT-3

Sheet No. 5/5

BHOPAL			THE COURSE			TORIUMAT •				
Branch		Aut	omobile Engineering		Semester		Fourth			
Course Code	404		Course Name	Basics of I	Mechanical Engineering-II					
Course Outcome 4		Student will be able to explain the theory, construction, working of basic vapor compression refrigeration system				T-L Hrs.	Marks			
Learning Outcome 1		student will be able to explain various basic concepts used in refrigeration and air conditioning					07	05		
Contents		Cooling, throttling process, coefficient of performance, humidity, Dalton's law of partial pressure, psychometric processes, psychometric chart, humidity, human thermal comfort, humidification, adiabatic saturation P-h and T-s diagrams								
Method of	Assessment	Paper pen test								
Learning Outcome 2		heat	rejected in gi	to calculate COP, reven simple numericate or Bell Coleman Cyc	ıl problem b	•		10		
Contents		Reversed Carnot cycle, representation on P-h and T-s diagrams, its limitations, Bell- Coleman cycle, representation on P-h and T-s diagram, calculation of refrigerating effect and heat rejected and COP for both the cycles, simple numerical problems based on use of formula								
Method of	Assessment	Theory exam								
Learning Outcome 3				e to explain the con sion refrigeration syst	-	orking of	08	10		
Contents		Theory, construction and working of basic vapor compression refrigeration system, construction and working of main components								
Method of Assessment Theory exam										

	//Dial-	\4/2	\ Dl	SCHEME FOR	LEARNING	В	Branch Co	de	Co	urse Co	Code Co		LO Code		А
KGPV	סוקוט) י	ma w	ing) Bhopal	OUTCOME A 0 3		4	0	4	1	1 Forr		mat No. 4			
COURS	E NAME	Basics o	f Mechanical Engi	neering-II											
CO Des	cription	Studen	t will be able to	calculate values of va	arious paramete	rs rela	ated t	o flo	w of v	wate	r in a	oipe	line		
LO Desc	cription		t will be able to ding continuity eq	calculate the value o uation	f water pressure	in a g	given	prob	lem,	at ar	ny cros	S -S(ectior	nal are	ea of the
				SCH	IEME OF STUDY										
S. No.		Learning	Content	Teaching –Learning Method	Description of	T-L P	rocess	5	Teach Hrs.		Pract. Tut Hrs		LR Requi	_	Remark
1.	Viscosity gravity, v — atmosp pressure vacuum a pipe, conumerica	ty, density, , specific , various types of pressure spheric pressure, gauge re, absolute pressure, n pressure, flow of water in continuity equation, simple cal problems based on pressure /continuity		to contents, dem methods of solvi problems. Stude practice to solve under guidance of	formulas related lemonstrate olving different idents will lve problems ce of the teacher. ssess their ability ecessary			06		02		Book:- Mecha by R Khur Oi Its equiva	anics . S. rmi	NIL	
				SCHEM	IE OF ASSESSMEN	Т				'					1
S. No.	Meth			Description of As	ssessment				Maxir Maı	_		esou egui	rces		xternal /

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions. First will be theoretical question to assess the ability of student to explain given theoretical concepts in approx. in 08 min. Second will be a numerical question to assess the ability of student to calculate the unknown variable by using the relevant formula, which can be solved by the student in approx. 12 min	05	Framed questions	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

D.C	DV /Diala		SCHEME FOR	LEARNING	Ві	Branch Co	de	Cou	ırse Code	CO Cod	e Code	А
KG	PV (Dipio	ma Wing) Bhopal	OUTCOME		Α	0	3	4	0 4	1	2 F	ormat No. 4
col	JRSE NAME	Basics of Mechanical Engi	neering-II				·		·	·		
CO E	escription	Student will be able to	calculate values of va	arious parameter	rs rela	ated t	o flo	w of v	vater ir	n a pip	peline	
LO D	escription	Student will be able to of simple U-tube mercu		pressure in a giv	en pr	obler	n, at	a cro	ss secti	ion of	the pipe	through use
			SCH	EME OF STUDY								
_												
S. No.	L	earning Content	Teaching -Learning Method	Description of	T-L Pr	roces		Teach Hrs.	Pra /Tut		LRs Require	Remark

and provide necessary

remedial and tutorials

equivalent

for calculating the pressure using $\ensuremath{\mathsf{U}}$

tube mercury manometer

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions. First will be simple numerical question to assess the ability of student to convert water pressure in to height of water column or viceversa in approx. 06 min. Second will be a simple numerical question on U tube manometer to assess the ability of student to calculate the unknown variable by using the relevant formula, which can be solved by the student in approx. 12 min	10	Framed questions	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

D.C.D.	/p: .l.	······································	SCHEME FOR LEARNING		Branch Code			C	ourse Co	ode	CO Code	LO Code		A
KGP	RGPV (Diploma Wing) Bhopal		OUTCOME A 0			0	3	4	0	4	1	3	Forn	nat No. 4
COUF	RSE NAME	Basics of Mechanical Eng	ineering-II											
CO Description Student will be able to calculate values of various parameters related to flow of water in a pipeline														
LO De	scription	Student will be able to equipped with Venturi-	•				•			•	n sim	ple p	roble	m of pipe
			SCHI	EME OF STUDY										
S.	L	earning Content	Teaching –Learning	Description of T-	·L Pr	oces	5	Teacl		Pract		LR	s .	Remarks

S. No.	Learning Content	Teaching -Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Bernoulli's theorem, its application, various types of energy heads, Bernoulli's equation, construction and working of Venturi-meter, Orifice-meter and Pitot tube, use of Bernoulli's equation for calculating various parameters related to flowing water in a given simple problem of pipe equipped with Venturi-meter, Orifice-meterand Pitot tube.	Traditional Lecture method	Teacher will explain different concepts and formulas related to contents, demonstrate methods of solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	07	03	Book:- Fluid Mechanics by R. S. Khurmi Or Its equivalent	NIL

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame one question, which will be a simple numerical question on Venturimeter / Orifice meter / Pitot tube to assess the ability of student to calculate the unknown variable by using the relevant formula, which can be solved by the student in approx. 15 min	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

D 🔿	DV / D! L -	\A/i \ Di	SCHEME FOR L	EARNING	NG Branch Code		Cor	ırse Code	Co	de Code	A
KG	PV (Diplor	ma Wing) Bhopal	OUTCOI	ME	A C	3	4	0 4	. 2	2 1 Fo	ormat No. 4
COU	IRSE NAME	Basics of Mechanical Engi	neering-l								
CO D	escription	Student will be able to spiping and production d	•	•	nd draw	ings r	elated	to thre	eads,	fasteners,	weld joints
LO D	escription	Student will be able to situation	select and draw sket	ches of differe	nt types	of th	reads	and fa	stene	ers in a giv	en problem
	'		SCHE	ME OF STUDY							
S. No.	L	earning Content	Teaching –Learning Method	Description o	f T-L Proc	ess	Teach Hrs.	Pra /Tut		LRs Required	Remarks
1	Detachable & permanent fasteners, sketches of threads (square, acme, knuckle, Internal – external threads, Left hand – right hand threads, Single & multi start threads), sketches of studs (cap screws, machine screws, set screws), sketches of bolts & nut (hexagonal, square), sketches of rivets (snap, pan, countersunk, conical), sketches of common keys		Traditional Lecture method	Teacher will explain different concepts and methods related to contents, demonstrate methods for solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials			06	0	2	Book:- Machine Drawing by N. D. Bhat Or Its equivalent	NIL
			SCHEME	OF ASSESSMENT	-						
S. No.	Method of Assessment		Description of Ass	sessment				Maxir Mai	_	Resources Required	External / Internal
1.	. Theory exan	Examiner will frame two questions, first will be to draw the given thread / nut / bolt/ ory exam stud in (to be solved in approx. 8 min.), second will be to sketch the given rivet or key (to be solved in approx. 7 min.)					-	10)	Framed question	External

DC.	DV /Diele	ma Wina \ Dhanal	SCHEME FOR LEARNING		Branch Code			urse Cod	Δ .	O LO de Code		
KG	RGPV (Diploma Wing) Bhopal		OUTCOME A 0 3					0	4	2 2	Format No	
cou	IRSE NAME	Basics of Mechanical Eng	ineering-I									
CO D	escription	Student will be able to piping and production	•	nterpret sketches and or prious symbols	drawin	ıgs rel	ated	to th	reads,	fasten	ers, weld jo	
LO D	escription	Student will be able to	draw and interpre	t the weld joints, piping	g layou	ut and	pipe	drav	wings.			
			S	CHEME OF STUDY								
S.	1.	earning Content	Teaching –	Description of T-L Pr	ncess	1	Гeach		ract.	LF	Rs Rem	
No.	L	earning Content	Learning Method	Description of 1 211	00000		Hrs.	 	ut Hrs.	Requ	ired	

1	Weld symbols as per BIS-813 / ASME (primary symbols & supplementary symbols), weld nomenclature, weld dimensions, pipe-types, standards and designation methods, pipe line symbol as per passing fluid, air, gas, water, Piping fitting symbols, pipe line diagram.	Traditional Lecture method	Teacher will explain different concepts and methods related to contents, demonstrate methods for solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	02	Book:- Machine Drawing by N. D. Bhatt Or Its equivalent	NIL	
---	---	-------------------------------	---	----	----	--	-----	--

S.	Method of	Description of Assessment	Maximum	Resources	External /
No.	Assessment		Marks	Required	Internal
1.	. Theory exam	Examiner will frame two questions, first will be to draw the given weld symbol, thread, second will be to sketch the given pipeline/ pipe fitting symbol, which can collectively be solved by the student in approx. 20 min	05	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

Branch Code			Co	urse Co	CO Code	LO Code		
Α	0	3	4	0	4	2	3	

Format No. **4**

COURSE NAME	Basics of Mechanical Engineering-II
CO Description	Student will be able to select, draw and interpret sketches and drawings related to threads, fasteners, weld joints, piping and production drawing related various symbols
LO Description	Student will be able to interpret and explain the meaning and relevance of various symbols and values used in the given simple production or assembly drawings

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Meaning and relevance of different sections, dimensions, symbols related to limits, fits, tolerances, machining and welding symbols, pipe related symbols, different drawing notes, tool list and gauge list.	Traditional Lecture method	Teacher will explain meaning and relevance of different sections, dimensions, symbols, drawing notes, and lists used in production and assembly drawings, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	08	04	Book:- Machine Drawing by N. D. Bhatt Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S.	Method of	Description of Assessment		Resources	External /
No.	Assessment			Required	Internal
1	. Theory exam	Examiner will frame two questions, first will be about meaning and relevance of limits, fits, tolerances related given symbols and values in a given drawing, second will be about meaning and relevance of the machining/welding symbols in a given drawing, which can be collectively solved by the student in approx. 20 min	10	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING
RGPV (Dipiolila Willg) Bilopal	OUTCOME

Branch Code			Cc	ourse Co	CO Code	LO Code	
Α	0	3	4	0	4	3	1

Format No. **4**

COURSE NAME	Basics of Mechanical Engineering-II
CO Description	Student will be able to apply appropriate methods to enhance the productivity and quality in the industrial activities
LO Description	Student will be able to calculate standard time in the given problem, from given time data gathered through stop watch time study or work sampling

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Time study, its importance for productivity, uses of time study, procedures of stop watch time study and work sampling, observed and standard times, performance rating, calculation of standard time from given time related data gathered from either stop watch method or work sampling, simple numerical problems based on use of formula only	Traditional Lecture method	Teacher will explain the contents to students, demonstrate the procedures for calculating standard time, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	05	02	Book:- Industrial Engg. by O. P. Khanna Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment		Resources Required	External / Internal
1	Theory exam	A numerical question will be framed, based either on stop watch time study or on work sampling, for calculating the unknown variable using the formula and given values of known variables, which can be solved by the student in approx. 15 min.	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DC!	DV /Diplo	ma Wing \ Phonal	SCHEME FO	SCHEME FOR LEARNING Branch Code			de	Course Code			CO LO Code Code	Code	Format No. 4	
NG	RGPV (Diploma Wing) Bhopal		OUT	OUTCOME A 0 3			3	4	0	4	3 2			
COURSE NAME Basics of Mechanical Engineering-II														
CO D	escription	Student will be able to ap	ply appropriate met	thods to enhance the	prod	uctivi	ty an	d qua	ity ir	n the ii	ndus	trial acti	vities	
LO D	escription	Student will be able to ca the given confidence leve		_						-	icati	on limit	s, considerin	
			S	CHEME OF STUDY										
S. No	L	earning Content	Description of T-L Process				Teach Hrs.		Pract. Tut Hrs		LRs Require	Remark		
Normal distribution curve, its important characteristics, six sigma limits, confidence levels, z-value, use of z-value tables, calculation of area under normal curve, other applications in statistical quality control, simple numerical problems on calculation of area under the curve using standard tables		Traditional Lecture method	Teacher will explain to students, demon procedures for find under the curve, stupractice to solve difference under guiteacher. Teacher was ability and provide remedial and tutori	strate ing ar udent feren dance ill asse neces	the ea s will t e of the	e	06		03	In ei b O Kl O It	. P. hanna r	NIL		
			SCHE	EME OF ASSESSMENT	Γ				ı				1	
S. No.	Method o		Description of A	ssessment					axim Mark			sources equired	External ,	

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Framed

question

Internal

05

A numerical question will be framed, for finding calculating the portion of

area values, which can be solved by the student in approx. 15 min.

1. Theory exam

population or area under the normal distribution curve after calculating z values

or using given z-value and using normal curve area tables or given normal curve

RGPV (Diploma Wing) Bhopal		SCHEME FOR	LEARNING	Bran	SCHEME FOR LEARNING Branch Code		Cou	Course Code		LO le Code	4			
		OUTCOME			0	3	4	0 4	1 3	3 F	ormat No. 4			
cou	RSE NAME	Basics of Mechanical Engi	neering-II						ı					
CO D	escription	Student will be able t activities	o apply appropriate	e methods to enh	ance	the	prod	luctiv	vity ar	nd qua	ality in th	e industria		
O D	escription	Student will be able to charts, and construct the process		· • •										
	'		SCI	HEME OF STUDY										
S. No	Le	arning Content	Teaching –Learning Method	Description of T	T-L Process			each Hrs.	Pra /Tut	nct. Hrs.	LRs Require	Remark		
1	assembling statistical procontrol charulch, LCL, Cetheir formul calculations actual chart	rol in manufacturing and processes, theory of cocess control, process ts, their types and use, entre-line values and ae for X bar & R charts, of values, procedure for preparation at the shop sis of charts for roductivity	Traditional Lecture method	demonstrate the p for preparation of a charts, students wi solve different pro guidance of the tea Teacher will assess	students, te the procedures tion of X bar & R ents will practice to ent problems under the teacher. I assess their ability e necessary remedial		contents to students, demonstrate the procedures for preparation of X bar & R charts, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial		er y	06	0		Book:- Industrial engg. by O. P. Khanna Or Its equivalen	NIL
			SCHEN	ME OF ASSESSMENT										
S. No.	Method of Assessmen		Description of A	Description of Assessment					Maxi Ma		Resource Required			
1.	Theory exar	n centerline, UCL, LCL fo	ed, in which student will be asked to calculate the values of X bar or R chart and plot the chart on the graph paper, which ident in approx. 15 min					1	0	Framed question	External			

SCHEME FOR LEARNING OUTCOME

Branch Code			Co	ourse Co	CO Code	LO Code		
Α	0	3	4	0	4	4	1	

Format No. 4

COURSE NAME	Basics of Mechanical Engineering-II
--------------------	-------------------------------------

CO Description | Student will be able to explain the theory, construction, working of basic vapor compression refrigeration system

LO Description student will be able to explain various basic concepts used in refrigeration and air conditioning

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Cooling, throttling process, coefficient of performance, humidity, Dalton's law of partial pressure, psychometric processes, psychometric chart, humidity, human thermal comfort, humidification, adiabatic saturation P-h and T-s diagrams	Traditional Lecture method	Teacher will explain the contents to students, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	05	02	Book:- Refrigeration and Air Conditioning by C. P. Arora Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S.	Method of	Description of Assessment	Maximum	Resources	External /
No.	Assessment		Marks	Required	Internal
1	. Paper pen test	A question will be framed to assess the ability of student to explain the given three basic concepts, which can be solved by the student in approx. 15 min	05	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

D C I	RGPV (Diploma Wing) Bhopal		SCHEME	FOR LEARNING	В	ranch Co	ode	C	Course Code		CO Code	LO Code		
KGI	אן (טוףוט	oma wing) Bhopai	OL	JTCOME	Α	0	3	4	0	4	4	2	Form	nat No. 4
cou	RSE NAME	Basics of Mechanical Engin	eering-II						<u>'</u>					
CO D	escription	Student will be able to e	xplain the theo	ry, construction, work	ing o	f bas	ic vap	or c	ompre	ssi	on ref	rigera	tion s	system
LO D	escription	Student will be able to based on Reversed Carne			nd h	eat	reject	ed i	n give	n s	imple	nume	erical	problem
				SCHEME OF STUDY										
S. No	I	Learning Content	Teaching – Learning Method	Description of T-L P	roces	rocess Teac Hrs.			Pract /Tut Hi		LRs	Requir	red	Remarks
1	Reversed Carnot cycle, representation on P-h and T-s diagrams, its limitations, Bell- Coleman cycle,		reversed Carnot cycle, representation In P-h and T-s diagrams, its In P-h and T-s diagrams, contents to students will practice to solve problems under guid the teacher. Teacher method their ability and provinces of the cycles, simple numerical Traditional Lecture method their ability and provinces are remedial as a second contents.		, , students different ance of will assess ide		07		04		and A Condi C. P. A Or	geratio ir itioning	ng by	NIL
	-		S	CHEME OF ASSESSMENT										'
S. No.	Method o		Description of Assessment					N	/laximu Marks			source equired		External / Internal
A numerical question will be set to assess the ability of student to cause of the student to cause of the student in approx. 15 min									10		1	ramed uestion		External
		ADI	DITIONAL INSTR	UCTIONS FOR THE HOD/	FACL	JLTY	(IF AN	Y)						

DC.		ma Mina \ F	Phonol	SCHEN	ME FOR LEARNING	В	ranch Co	de	Co	ourse Code		CO Code	LO Code	_	1
KU	סוקוט) אין	ma Wing) E	onopai		OUTCOME	Α	0	3	4	0	4	4	3	Form	at No. 4
cou	RSE NAME	Basics of Mecha	anical Engineer	ring-II											
CO D	escription	Student will be	e able to expl	ain the t	heory, construction, work	ing o	f bas	ic vap	or c	ompre	ssio	n ref	rigerat	tion s	ystem
LO D	escription	Student will be	e able to expl	ain the o	construction, working of ba	asic v	apor	comp	oress	ion re	frige	eratio	n syst	tem.	
					SCHEME OF STUDY										
S. No	Learnin	ng Content Teaching -Learning Method Description of T-L Process				Teacl Hrs.		Pract. Tut Hr		LRs Required			Remarks		
1	Theory, construction and working of basic vapor compression		Traditional Lo		Teacher will explain the conto students, , students will to solve different problems guidance of the teacher. To will assess their ability and necessary remedial and tut	pract unde ache provi	er er ide	05		03	F 6	and A Condi C. P. <i>A</i> Or	eration ir tioning	g by	NIL
					SCHEME OF ASSESSMENT										
S. No.	Descript			Descripti	on of Assessment			Maximum Marks			_	source equired		external , Internal	

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Framed

question

External

10

Two questions will be asked to assess the ability of student to explain theory

/construction/ working of the refrigeration system/ main components, which

can be solved by the student in approx. 15 min

1. Theory exam

RGPV (D	IPLON BHOPA		NG)	OBE CURRIC	CULUM FOR DURSE	FORMA	\т-З		Sheet No. 1/5		
Branch		A	UTON	MOBILE ENGINEE	RING	Semester		Four	th		
Course C	ode	403	3	Course Name	Vehic	le Body Engi	neer	ing			
Course (Outcon	ne 1		lent will be able in a sign.	to explain differ	ent types of	car	T-L Hrs	Marks		
Learning	Outco	me 1	/con	lent will be abnstruction /components.	•		.	08	05		
Cor	ntents		regu com stud	oduction to Car boolations, driver's versions, driver's versions of car leading of different types of different types of different types of the construction of the co	isibility, car body body regarding leas of doors and	y construction cation, purp window actu	n, st ose,	udy of	f major ruction,		
Method of	f Assess	ment	Pape	er pen test							
Learning	Outco	me 2	Student will be able to suggest various methods to improve the visibility, available space and safety for the given car. 07 05								
Cor	ntents		impr Cond	oility and space roving visibility and cept, working princeral lock	d space in cars.	Safety requ	ireme	ents fo	or cars.		
Method of	f Assess	ment	Pape	er pen test							
Learning	Outco	me 3		lent will be able to ponents of car boo	•	panels and		10	20		
Contents			Identification of Bumper, Fender, Door panel, Centre post, Cowl Panel, Lower Door skin, Rocker Panel, Cab corner, Lower front Bedside, Rear Panel, Wheel House, Lower Rear Bedside, Header Panel, Roof Panel, Wheel tub, Tailgate, Front and Rear Quarter Panel through Construction/ location of these panels and components in the given car Body								
Method of Assessment				oratory test by obs	ervation						

RGPV (I	DIPLON BHOP	ЛА WING) AL	OBE CURRICULUN THE COURSE	FORM	iaт- 3	She	eet . 2/5				
Branch		AUTO	MOBILE ENGINEERING		Semester	ı	Fourth				
Course	Code	403	Course Name Vehicle Body Engineering								
Cours	e Outco	ome 2	Student will be able to explain the concepts and importance of aerodynamics and ergonomics in car body design. T-L Hrs								
Learnii	ng Outo	ome 1	Student will be able to apply principles of aerodynamics of in minimizing the air resistance for the moving car.								
C	Content	s	Aerodynamics, principles of aerodynamics, aerodynamic devices, air drag on vehicle, types of air drags and their effects, forces and moments acting on vehicle body.								
Method	of Asse	essment	Paper-pen test								
Learnii	ng Outo	ome 2	Student will be able to apply principles of ergonomics in car body interior space for maximum comfort of driver 08 and passengers								
Contents			Ergonomics, principles of ergonomics, Automotive ergonomics, seating position, leg room, head clearance, lateral clearance, sitting comfort/discomfort, reach and limitation of human, visual field, visual needs and visual obstruction								
Method	of Asse	essment	t Paper pen test								

RGPV (DIPLOMA WING) BHOPAL ranch AUTOM

OBE CURRICULUM FOR THE COURSE

FORMAT-3

Sheet No. 3/5

		AL	ITE	LOURSE			INU			
Branch		AUTO	MOBILE ENGINEERI	NG :	Semester	Fo	ourth			
Course	Code	403	Course Name	ng						
Course	e Outcoi	me 3	Student will be able to explain the different types of bus body and design T-L Marks							
Student will be able to explain different types / Learning Outcome 1 construction / components of bus body with help of appropriate sketches.							08	05		
Co	ontents	r	regulations, engine lo	cation, entrance	e and exit,	seating dir	nensi	ons bus		
		1	oody construction, stu ocation, purpose, con- kin construction		-		-			
Method		I s	ocation, purpose, con		-		-			
		ssment F	ocation, purpose, con	struction, types	of metal se	ections use	-			
Learnin	of Asses	ssment Fome 2	ocation, purpose, conskin construction Paper pen test Student will be able to	o identify various panels / nt features for king, Bumper, Si	of metal seconds and component ous body sude swing, \	and ts with thuch as Doo	10 eir lo	20 ocation		

•	PLOMA WING	5 ,	OBE CURRICULUM FOR THE COURSE			She No.	eet 4/5	
Branch	AU	TOMOBILE ENGINEERING	G	Semester	mester Fourth			
Course Co	ode 403	Course Name V	ehicle Body	Engineering	g			
Course Ou	tcome 4	Student will be able to select appropriate material for the given car body component.					Marks	
Learning C	Outcome 1	Student will be able to and specific uses of metaused for car body compo	allic alloys/no	•	-	08	05	
Co	ntents	Car body material requirements, study of steel sheet, plastics, GRP, CRP regarding their important properties and uses in vehicle body, interior materials requirements, types, applications, Glasses, their types, glass lamination, defrosting in glasses						
Method of	f Assessment	Paper pen test						
Learning C	Student will be able to select appropriate material for the given function/ working condition of a car body component / interior component							
Co	ntents	Selection of appropriate materials for the car body components / interior components on basis of given component function and its working conditions						
Method of	f Assessment	Paper pen test						

RGPV (DIPLOMA WING) BHOPAL

OBE CURRICULUM FOR THE COURSE

FORMAT-3

Sheet No. 5/5

BHOPAL		~L	THE C		/IAI-	No. 5/5				
Branch		AUTO	MOBILE ENGINEER	RING	Semester	ı	Fourth			
Course	Code	403	Course Name	Vehicle Body	Engineering					
Course O	utcome	e 5	Student will be able to treat, paint and seal the surface T-L of given metallic / non-metallic car body component Hrs							
Learning	Outcor	ne 1 p	tudent will be ab procedures for surfa on metallic and non-	ace treatment,	painting and	sealing	08	05		
Co	ontents	t	leed of car body on the ory of surface tre urface treatment /primers / paints and	atment / paintin	ng / sealing, d	ifferent	proced	ures for		
Method o	of Asse	ssment P	aper pen test							
		33mene	aper pen test							
Learning	Outcor	s S	tudent will be able of given metallic / no	•			10	20		
	Outcor	ne 2 o	tudent will be able	preparation of sealing, applying / sealing, finish	car body congon	ent omponer orocedur	nt surf es for	ace for surface		

SCHEME FOR LEARNING OUTCOME

A	LO Code	CO Code	de	ourse Co	Ca	le	ranch Coo	Bran	
Format No. 4	1	1	3	0	4	3	0	Α	

		OUTCOIVIE	7 0		7	•		_	_		
COURSE NAME	Vehicle body Engineering	ehicle body Engineering									
CO Description	on Student will be able to explain different types of car body and design.										
LO Description	Student will be able to ex	plain different types/construction/compo	nents of	ar bo	dy wi	ith h	elp of	fappr	opriat	te 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	Introduction to Car body, its purpose, requirements, types, dimensional regulations, driver's visibility, car body construction, study of major components* of car body regarding location, purpose, construction, study of different types of doors and window actuating mechanisms regarding construction, merits and limitations	Lecture method	Teacher will explain different concepts and descriptions related to contents. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	06	02	 Vehicle Body engineering – R.Tamilarasan. OR Vehicle Body Layout and Analysis- Andrew Livesey. OR Automobile Engg. Vol.5- Anil Chhikara. OR their equivalent 	* Bumper, Fender, Door panel, Centre post, Cowl Panel, Lower Door skin, Rocker Panel, Cab corner, Lower front Bedside, Rear Panel, Wheel House, Lower Rear Bedside, Header Panel, Roof Panel, Wheel tub, Tailgate, Front and Rear Quarter Panel

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal					
1	Paper pen test	Two theory questions related to the learned content will be asked in the test	05	Test paper, Rating Scale	Internal					
	INSTRUCTIONS FOR THE HOD / FACILITY (IF ANY)									

SCHEME FOR LEARNING OUTCOME

Bra	nch Code		Co	Course Code			LO Code	4
Α	0	3	4	0	3	1	2	Format No. 4

COURSE NAME | Vehicle body Engineering

CO Description | Student will be able to explain different types of car body and design.

LO Description Student will be able to suggest various methods to improve the visibility, available space and safety for the given car.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Visibility and space requirements in cars, various methods for improving visibility and space in cars. Safety requirements for cars. Concept, working principle and basic construction of door lock and central lock	Traditional lecture method	Teacher will explain different concepts and descriptions related to contents. He will give assignments and organize quizzes to ascertain their learning. Students will prepare assignments and attempt quizzes. Teacher will identify their weaknesses and provide necessary remedial and tutorials	05	02	 Vehicle Body engineering – R.Tamilarasan. OR Vehicle Body Layout and Analysis- Andrew Livesey. OR Automobile Engg. Vol.5- Anil Chhikara. OR their equivalent 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	One theory question related to the learned content will be asked in the university question paper	05	Test paper, Check list	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

В	ranch Coo	de	Co	ourse Co	de	CO Code	LO Code	
Α	0	3	4	0	3	1	3	Format No. 4

		OUTCOIVIL				•				
COURSE NAME	Vehicle body Engineering	ehicle body Engineering								
CO Description	Student will be able to exp	Student will be able to explain different types of car body and design.								
LO Description	Student will be able to ider	ntify various panels and components	of car	bod	y.					

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Identification of Bumper, Fender, Door panel, Centre post, Cowl Panel, Lower Door skin, Rocker Panel, Cab corner, Lower front Bedside, Rear Panel, Wheel House, Lower Rear Bedside, Header Panel, Roof Panel, Wheel tub, Tailgate, Front and Rear Quarter Panel through Construction/ location of these panels and components in the given car Body	Lab demonstration method	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	08	02	working models/ disassembled engines/ different components and sub- assemblies, Rating scale	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the students to identify four car body components for bus and describe their location, function and important features	20	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

	Max. marks	Location	Function	Important features
Marking scheme	First body component	02	02	01
	Second body component	02	02	01
	Third body component	02	02	01
	Fourth body component	02	02	01

SCHEME FOR LEARNING OUTCOME

В	ranch Coo	de	Course Code			CO Code	LO Code	
Α	0	3	4	0	3	2	1	Format No. 4

COURSE NAME	Vehicle body Engineering
CO Description	Student will be able to explain the concepts and importance of aerodynamics and ergonomics in car body design.
LO Description	Student will be able to apply principles of aerodynamics in minimizing the air resistance for the moving car

SCHEME OF STUDY

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Aerodynamics, principles of aerodynamics, aerodynamic devices, air drag on vehicle, types of air drags and their effects, forces and moments acting on vehicle body.	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	05	02	 Vehicle Body engineering –A.K Babu Vehicle Body engineering – R.Tamilarasan. Automobile Engg. Vol.5- Anil Chhikara. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper-pen test	One theory question related to the learned content will be asked in the test paper	05	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	Diplo	oma	Wing)	Bhopal
			0,	

SCHEME FOR LEARNING OUTCOME

A	LO Code	CO Code	de	Course Code			Branch Code		
Format No. 4	2	2	3	0	4	3	0	Α	

COURSE NAME | Vehicle body Engineering

CO Description | Student will be able to apply principles of Aerodynamics and ergonomics in car body design.

LO Description Student will be able to apply principles of ergonomics in car body interior space for maximum comfort of driver and passengers

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Ergonomics, principles of ergonomics, Automotive ergonomics, seating position, leg room, head clearance, lateral clearance, sitting comfort/ discomfort, reach and limitation of human, visual field, visual needs and visual obstruction	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	6	2	 Vehicle Body engineering –A.K Babu Vehicle Body engineering – R.Tamilarasan. Automobile Engg. Vol.5- Anil Chhikara. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
		One theory question related to			
1	Paper pen test	the learned content will be asked	05	Test paper, Check list	Internal
		in the test paper			

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

В	ranch Coc	le	Co	ourse Co	CO Code	LO Code	
Α	0	3	4	0	3	3	1

Format No. 4

COURSE NAME	Vehicle body Engineering
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CO Description | Student will be able to explain the different types of bus body and design

LO Description | Student will be able to explain different types / construction / components of bus body with help of appropriate 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	Introduction to bus body, its purpose, requirements, types, dimensional regulations, engine location, entrance and exit, seating dimensions bus body construction, study of major components* of bus body regarding location, purpose, construction, types of metal sections used and double skin construction	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	06	02	 Vehicle Body engineering –A.K Babu Vehicle Body engineering – R.Tamilarasan. Vehicle Body Layout and Analysis- Andrew Livesey. Automobile Engg. Vol.5- Anil Chhikara. 	*Door glass, door assembly, Pedal housing, Bumper, Side swing, Wind shield, Sun shade, Skirt panels, Wheel arch, Roof panel bays, Valance panel

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Two theory questions related to the learned content will be asked in the university question paper	05	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

Branch Code			Co	ourse Co	de	CO Code	LO Code	
Α	0	3 4 0 3 3		2	Format No. 4			

COURSE NAME	Vehicle body Engineering
CO Description	Student will be able to explain different types of car body and design.

LO Description | Student will be able to identify various panels and components of bus body.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Identification of various panels / components with their location, function and important features for bus body such as Door glass, door assembly, Pedal housing, Bumper, Side swing, Wind shield, Sun shade, Skirt panels, Wheel arch, Roof panel bays, Valance panel	Lah	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	07	03	 different components and sub- assemblies of Bus Body. 	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the students to identify four bus body components and describe their location, function and important features	20	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

Max. marks	Location	Function	Important features
First body component	02	02	01
Second body component	02	02	01
Third body component	02	02	01
Fourth body component	02	02	01

DCDV/Diala	······································	SCHEME FOR LEARNING		Branch Code			Course Code			LO Code	_
KGPV (DIPIC	oma Wing) Bhopal	OUTCOME	Α	0	3	4	0	3	4	1	Format No. 4
COURSE NAME	NAME Vehicle Body Engineering										
CO Description	Student will be able to sel	udent will be able to select appropriate material for the given car body component.									
LO Description	Student will be able to ex car body components.	plain the important properties and spe	cific u	ises o	f met	allic	alloy	s / no	on-me	tallic r	naterials used for
		SCHEME OF STUDY									

S. No.	Learning Content	Teaching –Learning Method	Description of T- L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Car body material requirements, study of steel sheet, plastics, GRP, CRP regarding their important properties and uses in vehicle body, interior materials requirements, types, applications, Glasses, their types, glass lamination, defrosting in glasses	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	06	02	 Vehicle Body Engineering –A.K Babu Vehicle Body Engineering – R.Tamilarasan. Automobile Engg. Vol.5- Anil Chhikara. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Two theory questions related to the learned content will be asked in the test paper	05	Test paper Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING	Branch Code			Course Code			CO Code	LO Code	
		OUTCOME		0	3	4	0	3	4	2	Format No. 4
COURSE NAME	RSE NAME Vehicle Body Engineering										
CO Description	Student will be able to sel	Student will be able to select appropriate material for the given car body component.									
LO Description	Student will be able to select appropriate material for the given function/ working condition of a car body component /										
	ı	SCHEME OF STUDY									

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Selection of appropriate materials for the car body components / interior components on basis of given component function and its working conditions	Traditional lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	02	04	 Vehicle Body engineering –A.K Babu Vehicle Body engineering – R.Tamilarasan. Automobile Engg. Vol.5- Anil Chhikara. 	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	One theory question will be framed to assess the ability to select material in the given case, which could be solved by the student in approx. 08 min	05	Test paper, rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DCDV/Diala	one Mine \ Diseasel	SCHEME FOR LEARNING		Branch Code			Course Code			LO Code	4
RGPV (Diploma Wing) Bhopal		OUTCOME	Α	0	3	4	0	3	5	1	Format No. 4
COURSE NAME	Vehicle body Engineering	chicle body Engineering									
CO Description	Student will be able to trea	t, paint and seal the surface of given r	netal	lic / r	non-n	netall	lic ca	r bod	y com	ponen	it
LO Description	Student will be able to expl metallic car body compone	dent will be able to explain theory and general procedures for surface treatment, painting and sealing on metallic and non- callic car body components.									

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Need of car body component surface treatment / painting / sealing, theory of surface treatment / painting / sealing, different procedures for surface treatment /painting / sealing, need and function of solvents / primers / paints and sealants.	Lecture method	Teacher will organize lecture inside the class based on his/her session plan. Discuss the topics with students, provide quiz, assignment etc.	06	02	 Vehicle Body engineering – A.K Babu Vehicle Body	If necessary teacher will suggest more video link, learning resources which will help the students to solve quiz, prepare assignments etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Two theory questions related to the learned content will be asked in the test paper	05	Test paper, Check list	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SCHEME FOR LEARNING OUTCOME

В	ranch Coc	le	Co	urse Co	de	CO Code	LO Code
Α	0	3	4	0	3	5	2

Format No. 4

COURSE NAME	Vehicle body Engineering
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CO Description | Student will be able to treat, paint and seal the surface of given metallic / non-metallic car body component

LO Description Student will be able to treat, paint and seal the surface of given metallic / non-metallic car body component

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Identification and preparation of car body component surface for treatment/painting/ sealing, applying standard procedures for surface treatment / painting / sealing, finishing, housekeeping and safety while surface treatment/painting/ sealing	Lab demonstration method	Teacher will demonstrate the contents to the students. Students will practice under the guidance of teacher.	06	04	different components and sub-assemblies of car body components, tools and equipments for surface treatment/painting/sealing, raw materials/consumables, safety devices	NIL

SCHEME OF ASSESSMENT

S. No	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Examiner will ask the student to prepare given body part surface for painting / sealing, or paint/ seal the surface of given car body component	20	Different components and sub-assemblies of car body components, tools and equipments for surface treatment/ painting/ sealing, raw materials /consumables, safety devices, Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

The assessment will be done on basis of following performance indicators:-

1. Quality of task planning (4)

- 2. Extent to which standard procedure followed (4)
- 3. Extent to which tools used in appropriate ways (4)
- 4. Extent of housekeeping during completion of task (4)
- 5. Extent of safety precautions taken during the work (4)

RGPV (Diploma Wing) Bhopal		SCHEME I SK LEAKHING							Code	
		OUTCOME			4	0	5	1	1	4
COURSE NAME	Professional Developm	Professional Development- IV								
CO Description	Student will be able to academic events of the	organize activities related to student o department	chapters o	f prof	essic	onal l	bodie	es and	stude	ent related
LO Description	Student will be able to organize activities related to student chapters of professional bodies									

Branch Code

Course Code

Format No.

SCHEME FOR LEARNING

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Planning and organizing group activities and events, deciding subactivities, distributing responsibilities, arranging resources sub-activities, scheduling subactivities	Traditional lecture method + Case Study	Teacher will teach students how activities are planned and organized, will discuss examples and cases. Teacher will form small student groups, guide them to plan and organize the activities assigned to their group, teacher will supervise their implementation of the activity plans and correct their mistakes, teacher will ensure their learning through organizing the related different activities	04	06	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

SCHEME OF ASSESSMENT

S.	Method of	Description of Assessment	Maximum	Resources	External /
No.	Assessment		Marks	Required	Internal
1	Student activity/task	The teacher will ask the students to organize small group-activity events. Teacher will observe and assess the extent of quality of plan, implementation of plan and student's learning for organizing professional body activities	10	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Suggested departmental student chapter activities:

- Organizing departmental chapter meetings
- Local community awareness programme on social issues, traffic rules, cleanliness drive, use of plastics and environmental protection etc.
- Poster competition on social concerns, traffic rules, cleanliness drive, use of plastics and environmental protection etc. and awarding the best prepared poster
- Engineering knowledge competitions
- Outreach workshop for local high school students
- Publishing institutional/departmental student chapter newsletter
- Establishing and managing students' cooperative book club
- Organizing information dissemination and application programme related to continuing and higher education opportunities and how to apply for them, for the students
- Organizing short training programmes on public speaking
- 2. Organizing any group activity consists of planning the activity and implementing the plan.
- 3. Process of planning any group activity consists of:
 - a. Deciding objectives of the activity
 - b. Deciding main sub-activities to achieve objectives
 - c. Deciding who will be responsible for doing sub-activities
 - d. Deciding what pre-requisite information /knowledge/ability is required to complete the any sub-activity
 - e. Deciding what resources will be required to conduct the sub-activities
 - f. Deciding the expected duration of sub-activities

g. Deciding at start and finish times of sub-activities

4. Suggested activity plan format(table) :-

5. Implementing the plan consists of:-

- a. Educating responsible members about how and when to perform the assigned sub-activity
- b. Acquiring necessary pre-requisite knowledge/information / ability before starting any sub-activity
- c. Arranging resources for various sub activities and provide to responsible members
- d. Ensuring timely start and finish of the different sub activities
- e. If necessary, revising and updating the plan during its implementation

6. Learning from organizing the activities:-

After organizing the activity, student groups will answer following self questions about their experiences of organizing the activities

- a. What problems we have faced during activity planning and implementation?
- b. How we managed to solve them?
- c. What mistakes and errors we committed in planning and implementation of these activities?
- d. What we have learned from these mistakes and errors?
- e. In future, what precautions we will take if we will be asked to again organize this activity?
- f. What are suggestions to improve planning and implementation of this activity?

7. Each student group should be allotted an activity from the above suggested list of professional body related activities.

8. Assessment criteria and their weights:-

S.	Criteria	Marks
No.		
1.	Extent of quality in Student's group activity plan	03
2.	Extent of quality in Implementation of the activity plan	03
3.	Extent of learning occurred through performing the group activity	04

9. In course of Professional Development-IV, department may assign teaching learning of one course outcome to one teacher and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under the three teachers for the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	Т3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	В3
SECOND 20 PERIODS	B2	В3	B1
THIRD 20 PERIODS	В3	B1	B2

10. The concerned teacher of CO1 may Divide the batch of students under him / her into small groups (4-5 students)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING	Branch Code	Course Code			CO Code	LO Code	Format No.		
		OUTCOME		4	0	5	1	2	4		
COURSE NAME	Professional Developme	ional Development- IV									
CO Description		Student will be able to organize activities related to student chapters of professional bodies and student related academic events of the department									
LO Description	Student will be able to organize student related academic events of the department										

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Planning and organizing group activities and events, deciding subactivities, distributing responsibilities, arranging resources sub-activities, scheduling subactivities	Traditional lecture method + Case Study	Teacher will teach students how activities are planned and organized, will discuss examples and cases. Teacher will form small student groups, guide them to plan and organize the activities assigned to their group, teacher will supervise their implementation of the activity plans and correct their mistakes, teacher will ensure their learning through organizing the related different activities	04	06	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

SCHEME OF ASSESSMENT

S.	Method of	Description of Assessment	Maximum	Resources	External /
No.	Assessment		Marks	Required	Internal
1	Student activity/task	The teacher will ask the students to organize small group-activity events Teacher will observe and assess the extent of quality of plan, implementation of the plan and student's learning for organizing student related academic events of the department	15	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Suggested student related academic events/ activities of the department:

- Organizing departmental award ceremonies for departmental outstanding students and high academic achievers
- Organizing departmental bulletin board preparation group activities for creating awareness about various scholarships, career prospects etc and awarding the best prepared bulletin board
- Organizing departmental faculty appreciation events
- Editing and publishing departmental newsletter and departmental magazine
- Updating departmental section at college web site/ web portal
- Organizing expert lectures of experts of local industry
- Organizing lectures of social, enterprising, professional achievers of nearby community
- Organizing expert lectures on morality, values, ethics and professional ethics
- 2. Organizing any group activity consists of planning the activity and implementing the plan.
- 3. Process of planning any group activity consists of:
 - a. Deciding objectives of the activity
 - b. Deciding main sub-activities to achieve objectives
 - c. Deciding who will be responsible for doing sub-activities
 - d. Deciding what pre-requisite information /knowledge/ability is required to complete the any sub-activity
 - e. Deciding what resources will be required to conduct the sub-activities
 - f. Deciding the expected duration of sub-activities
 - g. Deciding at start and finish times of sub-activities

4. Suggested activity plan format(table) :-

S. No.	Sub- activity number	Sub-activity description	Responsible group member	Duration	Start date	Finish date	Pre-requisite Knowledge /Information required	Resource required	
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5. Implementing the plan consists of:-

- a. Educating responsible members about how and when to perform the assigned sub-activity
- b. Acquiring necessary pre-requisite knowledge/information / ability before starting any sub-activity
- c. Arranging resources for various sub activities and provide to responsible members
- d. Ensuring timely start and finish of the different sub activities
- e. If necessary, revising and updating the plan during its implementation

6. Learning from organizing the activities:-

After organizing the activity, student groups will answer following self questions about their experiences of organizing the activities

- a. What problems we have faced during activity planning and implementation?
- b. How we managed to solve them?
- c. What mistakes and errors we committed in planning and implementation of these activities?
- d. What we have learned from these mistakes and errors?
- e. In future, what precautions we will take if we will be asked to again organize this activity?
- f. What are suggestions to improve planning and implementation of this activity?
- 7. Each student group should be allotted an activity from the above suggested list of professional body related activities.

8. Assessment criteria and their weights:-

S. No.	Criteria						
1.	Extent of quality in Student's group activity plan	03					
2.	Extent of quality in Implementation of the activity plan	03					
3.	Extent of learning occurred through performing the group activity	04					

9. In course of Professional Development-IV, department may assign teaching learning of one course outcome to one teacher and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under the three teachers for the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	Т3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	В3
SECOND 20 PERIODS	B2	В3	B1
THIRD 20 PERIODS	В3	B1	B2

10. The concerned teacher of CO1 may Divide the batch of students under him / her into small groups (4-5 students)

RGPV (Diploma W	ing) Bhopal
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SCHEME FOR LEARNING OUTCOME

Branch Code	Соц	ırse Cod	e	CO Code	LO Code	Format No.	
		4	0	5	2	1	4

	COURSE NAME	Professional Developmen	nt-IV										
	CO Description		o demonstrate self-learning DOCs / Podcast and different o	•	_							_	. •
	LO Description	Student will be able to pr	repare a report on his/her self	f learn from	atte	nding	an av	ailabl	e free	onli	ne tra	ining p	rogramme

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Need of training programmes, online short training programmes for students, various sources, programme selection and joining, preparation of report about self-learning from attending the online training programme	Traditional lecture method + Case Study	Teacher will guide students regarding how to search, select and how to join the available free online short training programmes available for students. Teacher will also teach and guide students regarding how to prepare report about self-learning from the attended training programmes.	06	04	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Assessment of Student assignment	The teacher will assess the extent of student's self-learning, through examining the report prepared and submitted by the student regarding the attended online training programme	15	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

- 1. The online students' training programme may be of duration 3 to 5 days or equivalent duration in hours
- 2. Each student should join at-least one such online programme

3	3. If	few students are unable to join online training programmes, then for them department / institution should organize a short training programme
	fo	r them
4	. Su	ggested format for report:-
1	Tit	tle
2	2. Ge	eneral information:-
		1. Name
		2. Roll number
		3. Class /semester
		4. Place and date
3	3. Inf	formation regarding attended online training programme:-
		1. Name
		2. Duration, start and finish dates
		3. Organizing agency
		4. Internet link or plateform
2	l. M	y experience and learning about searching, joining and attending the online training programmes:-
		1. Major problems faced by me:-
		2. How I solved those problems:-
		3. Significant incidences:-
		4. What precautions I would take if I join similar programme in future:-
		5. What suggestions I would like to give to junior students regarding searching, joining and attending online training programmes:-
5	5. M	y learning on topic of online training:-
ϵ	s. Sig	gnature

5. Assessment criteria and their weights:-

S. No.	Criteria	Max. Marks
1	Extent of student's self learning regarding searching, joining and attending any online training programme (based on report)	4
2	Extent of student's self learning on the topic of the online training programme (based on report)	4
3	Quality of student's report prepared on his/her self-Learning from attending the online training programme	2

6. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	В3
SECOND 20 PERIODS	B2	В3	B1
THIRD 20 PERIODS	В3	B2	B1

7. The concerned teacher of CO1 may Divide the batch of students under him / her into small groups (4-5 students)

RGPV (Diploma Wing) Bhopal		\ D.L	SCHEME FOR LEARNING	Branch Co	Course Code		CO Code	Code FO	Format No.			
		Wing) Bhopai	OUTCOME	OUTCOME			5	2 2		4		
cou	IRSE NAME	Profe	essional Developme	nt-IV		1						
CO D	escription			o demonstrate self-learning through jo DOCs / Podcast and different online webi	•					•	•	
LO D	escription		ent will be able to er-Point Presentatio	present his/her self-learning from atte	nding the	available	online	trainiı	ng pro	ogram	me through	
				SCHEME OF STUDY								
S. No	Learning Teaching – Description of T-L Process Teach			Pract. /Tut Hrs.		Rs uired		Remarks				
1	PPP preparation Traditional lectur and presentation method + Case skills Study			Teacher will teach skills for PPP preparation and presentation skills to the students through examples and cases, teacher will provide feedback and suggestions on each student's PPP, teacher will guide and correct students during their presentations, teacher will solve their problems			04	vio	dout, deo m*	sugg onlir	eacher will est a suitable e video to be iewed by students	
				SCHEME OF ASSESSMENT								
S. No.	Method Assessmo	_		Description of Assessment				Maximum Marks		ources quired		
1	Assessme of Stude presentat	nt the	their self-learning from attending online training programme and teacher will assess the				10			ating cale	Internal	
		'	AD	DITIONAL INSTRUCTIONS FOR THE HOD/	FACULTY (IF ANY)	<u> </u>					
1.	Assessme	nt criteri	a and their weights:-									
	S. No.			Criteria						ax. arks		
	1 Ex	tent of s e	elf learning as reflecte	d from the PPP-contents					:	3		

	2	Extent of self-learning as reflected from the student's presentation and related discussion	3	Ī
	3	Overall quality of the PPP	2	
-	5	Extent of appropriateness of presenter's body postures, face expressions and quality of speaking	2	

2. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	Т3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	В3
SECOND 20 PERIODS	B2	В3	B1
THIRD 20 PERIODS	В3	B2	B1

D.	DV / D:1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	SCHEN	IE FOR LEARNING	Branch Code	Co	urse Code	CO Code	LO Code	Format No.
KG	RGPV (Diploma Wing) Bhopal		рраг	OUTCOME 4		4	0 5	0 5 3		4
cou	JRSE NAME	Professional Deve	elopment-IV							
CO D	escription	Student will be able	e to present his/ he	er knowledge about given qu	ality related	concepts	s prevailir	ıg in i	ndustry	/profession
LO D	escription	The student will b clients	e able to demonst	rate his / her knowledge al	oout ensuring	g quality	in profe	ssiona	al servic	es offered t
				SCHEME OF STUDY						
S. No	Learning Content Description of T-L Process					Pract. /Tut Hrs.		LRs quired	Remarks	
1	Professional service, need and importance of quality in professional service, various factors affecting quality of professional service, ensuring quality in professional service		Traditional lecture method + Case Study	Teacher will teach students the content through explain and examples, Teacher will provide assignment of case few end questions, to stude provide feedback on their s assignments to correct and their learning	ning cases also study with ents and ubmitted	06	04	v	ndout, ideo ilm*	*Teacher will sugges a suitable online vide to be viewed by students
				SCHEME OF ASSESSMENT						
S. No.	Method of Assessmen		Descrip	otion of Assessment			Maximu Marks		Resource Require	
Assessment of Student assignment The teacher will provide a case (with four descriptive answer type questions at the end) on issues of quality in offered professional service. After studying the case, students will write answers for the five descriptive answer type questions.				10		Rating Scale	Interna			

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Professional services : - These are the services offered by the professional to his/her client.
Examples of professional services include:
• Legal services
Accounting and bookkeeping
Marketing consultancy
• Architecture
• IT services, and more.
2. Factors affecting the quality of professional services:-
1. Timely and accurate assessment of the client's need
2. Educating the clients regarding merits and limitations of the different services being offered
3. Offering prompt services to clients
4. Offering services in accordance with standards formed and communicated to the clients
5. Timely and constructively handling client's doubts, quarries and complaints
6. Getting client's feedback or conducting clients' satisfaction surveys about the professional services provided and improving the
services
7. Keeping Honesty and loyalty with the client

- 8. Creating trustworthiness with the client
- 9. **Ensuring transparency in providing services through proper documentation** and sharing documents of services provided with the client
- 10. Getting accreditation certificate, for the professional services being offered to the clients, of the related approved quality assessing agencies

3. Suggested list of case-end questions:-

- 1. How many professional service related quality issues involved in this case?
- 2. Describe all the professional service related quality issues?
- 3. How these issues can be resolved?
- 4. In this case, according to you what should be the professional-client service system to ensure quality in professional services?

5. Assessment criteria and their weights:-

S. No.	Criteria	Max. Marks
1	Appropriateness of student's answer to first question	02
2	Appropriateness of student's answer to second question	02
3	Appropriateness of student's answer to third question	03
4	Appropriateness of student's answer to fourth question	03

6. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	В3
SECOND 20 PERIODS	B2	В3	B1
THIRD 20 PERIODS	В3	B2	B1

RGPV	(Diploma	Wing)	Bhopal
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SCHEME FOR LEARNING OUTCOME

Branch Code		Co	urse Cod	le	CO Code	LO Code	Format No.
		4	0	5	3	2	4

COURSE NAME	Professional Development- IV
CO Description	Student will be able to present his/ her knowledge about given quality related concepts prevailing in industry /professions
LO Description	The student will be able to present his/her knowledge about given practices or cultures like TQM / ISO9000 / Quality circle / Quality Control / Quality Audit / Six Sigma / Kaizen etc through a PowerPoint presentation

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Industrial practices or cultures like TQM / ISO9000 / Quality circle / quality control / quality audit / Six Sigma, kaizen etc, PP presentation skills	Traditional lecture method + Case Study	Teacher will teach concepts of various industrial practices, teacher will develop skills for PP preparation and presentation skills in the students, teacher will observe and improve student PP presentation, teacher will guide and correct students during their presentation, teacher will solve their problems and provide feedback	06	04	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Assessment of Student presentation	The teacher will arrange a departmental seminar in which students will present their PPP on their knowledge about industrial practices teacher will assess the knowledge as well as PowerPoint Presentation of individual students.	15	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Assessment criteria and their weights:-

S. No.	Criteria	Max. Marks
1	Extent of understanding formed about quality practices/culture as reflected from PPP contents	6
2	Extent of understanding formed about quality practices /culture as reflected from student's presentation	4
3	Extent of relevance, appropriateness of the PPP content	3
4	Extent of visual effectiveness in PPP	2

2. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	В3
SECOND 20 PERIODS	B2	В3	B1
THIRD 20 PERIODS	В3	B2	B1

RGPV (DIPLOMA WI BHOPAL			ING)	OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 1/3	
Branch			ALL BRACHES OF IV SEMESTER Semester				IV		
Course Code 405		5	Course Name	PROFESSIONAL DEVELOPMENT –IV					
Course Outcome 1			Student will be able to organize activities related to student chapters of professional bodies and student related academic events of the department				Teach Hrs	Marks	
Learning Outcome 1			Student will be able to organize activities related to student chapters of professional bodies				10	10	
Contents			Planning and organizing group activities and events, deciding subactivities, distributing responsibilities, arranging resources sub-activities, scheduling subactivities						
Method of Assessment			Internal Assessment of Student presentation						
Learning Outcome 2		Student will be able to organize student related events of the department			cademic	10	15		
Co	ontent	s	Planning and organizing group activities and events, deciding subactivities, distributing responsibilities, arranging resources sub-activities, scheduling subactivities						
Method of Assessment		Internal Assessment of Student presentation							

RGPV (DIPLOMA WING BHOPAL			ING)	OBE CURRICULUM FOR THE COURSE		FORMAT		Sheet No. 1/3	
Branch				ALL BRANCHES		Semester	IV		
Course Code 40		40!	5	Course Name	PD –IV				
Course Outcome 2		ome 2	Student will be able to demonstrate self-learning through joining available free online short training programmes preferably of NPTEL / MOOCs / Podcast and different online webinars related to his /her professional development				Teach Hrs	n Marks	
Learning Outcome 1			Student will be able to prepare a report on his/her self learn from attending an available free online training programme						
Contents			Need of training programmes, online short training programmes for students, various sources, programme selection and joining, preparation of report about selflearning from attending the online training programme						
Method	of Asse	essment	Intern	al Assessment of St	udent presentation				
Learning Outcome 2		come 2	Student will be able to present his/her self-learning from attending the available online training programme through Power-Point Presentation				10	10	
Contents			PPP preparationand presentation skills						
Method of Assessment			Internal Assessment of Student presentation						

RGPV (DIPLOMA WING) BHOPAL			ING)	OBE CURF	FORMA	- '2	Sheet No. 1/3		
Branch				ALL BRANCHES	Semester	IV			
Course Code 40		5 Course Name Professional development –iv							
Course Outcome 3		Student will be able to present his/ her knowledge about given quality related concepts prevailing in industry /professions				Teacl Hrs	Marks		
Learning Outcome 1			The student will be able to demonstrate his / her knowledge about ensuring quality in professional services offered to clients				10	10	
C	Contents		Professional service, need and importance of quality in professional service, various factors affecting quality of professional service, ensuring quality in professional service						
Method	of Asse	essment	Intern	al Assessment of St	udent assignment				
Learning Outcome 2		about Qualit	given practices or o y circle / Quality Co	o present his/her know cultures like TQM / ISO9 ntrol / Quality Audit / S erPoint presentation	ISO9000 / it / Six Sigma /		15		
Contents			Industrial practices or cultures like TQM / ISO9000 / Quality circle / quality control / quality audit / Six Sigma, kaizen etc, PP presentation skills						
Method of Assessment			Internal Assessment of Student presentation						