	RGPV (Diplo	oma Wing) Bhopal	SCHEME FOI		Br	anch C	ode	Co	urse C	ode	CO Code	LO Code	Format No. 4
			0010	ONE	M	0	2	5	0	2	1	1	
_	OURSE NAME	AUTOMOBILE EN	GINEERING										
СОГ	Description	Explain construction a	nd working of chassis	s and engine of an	automo	obile.							
LO D	escription	Identify different com	ponents of a given cha	assis layout.									
				SCHEME O	F STU	DY							
S. No.	Lea	arning Content	Teaching – Learning Method	Description o		1	ach rs.	Pract. Hi		LR	s Require	ed	Remarks
1	elements of	leaning of automobile, Interest of automobile, classification of automobile, tea		Teacher will ex the contents and provide handou	d	02		0	2	board	outs, chalk , PPT, tex charts, vi	t	

SCHEME OF ASSESSMENT

students. Teacher will

conduct assignments/ quiz/tutorial to make

students practice their

knowledge.

film.

demonstration,

tutorial

quiz, assignments,

layout of chassis, its parts and

operating systems.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Quiz	Student will be asked to identify components of a given chassis layout.	03	Test paper + Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of term work

RG	PV (Diplo	oma Wing) Bhopa	SCHEME FOR	–	Br	anch Co	ode	Co	urse C	ode	CO Code	LO Code	Format No. 4
	` 1	<i>37</i> 1	OUTC	OME	M	0	2	5	0	2	1	2	
	URSE ME	AUTOMOBILE	EENGINEERING				'						
CO Des	cription	Explain construct	ion and working of chassis	and engine of an	autom	obile.							
LO Des	cription	Describe construc	ction and working of an inte	ernal combustion e	engine	•							
				SCHEME OF	FSTU	DY							
S. No.	Lear	rning Content	Teaching –Learning Method	Description of Process	T-L	Teach Hrs.	Pra /Tut		L	Rs Requ	uired		Remarks
1	Meaning	and	Interactive classroom	Teacher will exp	olain	04	02	2	Hand	outs, cha	ılk board	l,	
	classifica	ation of I.C.	teaching,	the contents and					PPT,	text bool	k, charts	,	

SCHEME OF ASSESSMENT

provide handouts to

quiz/tutorial to make students practice

students. Teacher

their knowledge.

will conduct

assignments/

video film.

engines, two stroke and

four stroke engines, merits

and demerits, scavenging,

comparison of petrol and

diesel engines, firing

order, valve timing

diagrams.

demonstration, quiz,

assignments,

tutorial

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Student will be asked to describe construction and working of a given internal combustion engine.	10	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RG	RGPV (Diploma Wing) Bhopal		E FOR LEAR	NING	Br	anch (Code	C	ourse C	ode	CO Code	LO Code	Format No. 4	
		8 / . . .		OUTCOME		M	0	2	5	0	2	1	3	
	JRSE ME	AUTOMOBILE E	CNGINEERING	3				ı						
CO Des	cription	Explain construction	and working of	chassis and eng	ine of an	automo	obile.							
LO Des	cription	Identify a given engi	ine component ir	a given interna	l combus	stion en	gine m	odel.						
				SCH	EME O	F STU	DY							
S. No.		Learning Conte	nt	Teaching – Learning Method	Descri I	ption o			ach rs.	Pract /Tut Hrs.		LRs Req	uired	Remarks
1	of cylind piston rin rod, cranl	gine components, of head, gaskets, cylind der liners, piston at gs, types of piston ri k shaft, cam shaft, cra ywheel and governor.	Interactive classroom teaching, demonstratio n, quiz, assignments, tutorial	Teacher the conprovide students will conassigning quiz/tut students their kn	tents are hando s. Teachduct nents/ torial to s practi	nd uts to her o make	0	4	04	bo bo fil	andouts, coard, PPT, bok, charts m, and la anual.	text s, video		
				SCHEM	E OF A	SSESS	MENT	1						
S. No.	Metho	od of Assessment	Description	on of Assessme	nt		imum arks			Resour	ces Re	quired		External / Internal
1		oratory test by observation	given engine co	asked to identiful omponents in a station engine mo	given		10	O	bservat		n schedule/check-list /rating scales /rubrics			Internal
	1		ADDITIONAL	INSTRUCTIO	ONS FOI	R THE	HOD/	FACU	LTY (IF ANY)			1
					Part of lab				`					

RGI	RGPV (Diploma Wing) Bhopal		E FOR LEAR	NING	Br	anch (Code	C	ourse C	ode	CO Code	LO Code	Format No. 4	
	- (F	· · · g / F · · ·		OUTCOME		M	0	2	5	0	2	2	1	
COU		AUTOMOBILE E	CNGINEERING	3			ı	ı						
CO Desc	cription	Explain construction	and working of	cooling, lubrica	ting and	fuel fee	ed syste	ms of a	an auto	mobile.				
LO Desc	cription	Describe constructio	n and working o	f a given coolin	g system									
				SCH	IEME O	F STU	DY							
S. No.		Learning Conte	nt	Teaching – Learning Method		iption o			ach rs.	Pract /Tut Hrs.		LRs Req	uired	Remarks
1	system-a cooling system, circulation disadvant cooling	tages of air coolingsystems, the composystem —fan, radiat	er cooling, air water cooling em and pump antages and ng and water nents of water	Interactive classroom teaching, demonstratio n, quiz, assignments, tutorial	Teache the con provide student will con assignm quiz/tur student their kr	tents and hando is. Teach nduct hents/torial to is practi	nd uts to her o make)4	02	bo bo	andouts, coard, PPT, ook, charts	text	
				SCHEM	IE OF A	SSESS	MENT	•						
S. No.	Metho	od of Assessment	Description	nt		imum arks			Resour	ces Re	quired		External / Internal	
1	P	Paper pen test Student will be asked to describe construction and working of a given cooling system.					10		To	est pape	r + Rat	ting scale		Internal
			ADDITIONAL	INSTRUCTIO	ONS FO	R THE	HOD/	FACU	LTY (IF ANY	7)			
				Part	of progre	essive to	est-I				<u> </u>			

RGPV (Dip	loma Wing) Bhopal	SCHEME FOR		Bra	nch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
` 1	87 1	OUTC	OME	M	0	2	5	0	2	2	2	
COURSE NAME AUTOMOBILE ENGINEERING												
CO Description	Explain construction and	l working of cooling	, lubricating and fue	el fee	d syste	ms of a	n auto	mobile.				
LO Description	Describe construction an	nd working of a give	n lubrication system	1.								
			SCHEME OF S	STUI	ΟY							
		Teaching –	Description of T-	-I	Teach	Р	ract.					

S. No. **Learning Content** LRs Required Remarks Learning Hrs. /Tut Hrs. **Process** Method The necessity of lubrication 02 1 Interactive Teacher will explain 04 Handouts, chalk board, classroom the contents and PPT, text book, charts, system, S.A.E rating of provide handouts to video film. teaching, lubricants, types of lubrication demonstration, students. Teacher will system, petrol lubrication and quiz, conduct assignments/ high pressure lubrication quiz/tutorial to make assignments, system. tutorial students practice their knowledge.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Student will be asked to describe construction and working of a given lubrication system.	10	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RG	RGPV (Diploma Wing) Bhopal	oma Wing) Bhopal		SCHEME FOR		Br	anch C	ode	C	ourse	e Co	de	CO Code	LO Code	Format No. 4
	` 1	<i>67</i>		OUTC	OME	M	0	2	5	0		2	2	3	
	JRSE ME	AUTOMOBILE	ENG	INEERING		'			'	'					
CO Desc	cription	Explain construction	on and	l working of cooling	g, lubricating and	fuel fee	ed syste	ns o	of an auto	mobi	le.				
LO Desc	cription	Describe construct	ion ar	d working of a give	en fuel system.										
		I			SCHEME O	F STU	DY								
S. No.	Lear	rning Content	Tea	ching –Learning Method	Description of Process	T-L	Teach Hrs.		Pract. Tut Hrs.		LI	Rs Re	equired		Remarks
1	octane in carburette simple of point and injection fuel the working and A.C. fuel filter	onal fuels and refuels: cetane and rumbers, types of ors, working of carburettor, multiple systems, different ransfer pumps, of S.U electrical mechanical pump, ors, fuel injection el injectors.	teach demo	onstration, quiz, nments,	Teacher will exp the contents and provide handour students. Teacher conduct assignm quiz/tutorial to a students practice knowledge.	ts to er will nents/ nake	04		02	PP	T, t		chalk boar book, chart	´	
					SCHEME OF A	SSESS	MENT			'					
S. No.	Metho	od of Assessment		Description of A	ssessment		dimum arks			Reso	urc	es Re	quired		External / Internal
1	Г	Theory exam	COI	ndent will be asked a struction and work al system.			10		Que	estion	par	per + :	rating sca	le	External
			AD	DITIONAL INST	RUCTIONS FO	R THE	HOD/	FAC	CULTY (IF A	NY)				
]	Part of end semes	ter theo	ry exam	L							

R(GPV (Diplor	na Wing) Bhopal	SCHEME FOR		Br	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	31 , (21 p 101	(g) =• pur	OUTC	OME	M	0	2	5	0	2	2	4	
	URSE AME	AUTOMOBILE E	NGINEERING									1	
CO De	scription	Explain construction	and working of cooling	g, lubricating and	fuel fe	ed syste	ms of	an auto	mobile.				
LO Des	scription	Identify a given comp	ponent of a given cooling	ng/lubricating/fue	el feed s	ystems							
				SCHEME O	F STU	DY							
S. No.	Lear	ming Content	Teaching – Learning Method	Description of Process	T-L	Teach Hrs.		Pract. ut Hrs.		LRs I	Required		Remarks
1	and work	tion of construction king of cooling, fuel feed systems	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will exp the contents and provide handour students. Teacher conduct assigning quiz/tutorial to in students practice knowledge.	ts to er will nents/ nake	00		04	text b	ook, ch	nalk board narts, vide manual.		
				SCHEME OF A	SSESS	MENT							
S. No.	Metho	d of Assessment	Description of A	ssessment		imum arks			Resour	ces Re	quired		External / Internal
1		oratory test by observation	Student will be asked to Identify given compo- cooling/lubricating/fue	nents of a given		10	(Observat		edule/c es /rubi	heck-list /	rating/	Internal
			ADDITIONAL INST	RUCTIONS FO	R THE	HOD/	FAC	ULTY (IF ANY	7)			

Part of lab work

RG	PV (Diplo	oma Wing) Bhopal	SCHEME FO		Bran	ch Co	de	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	` 1	<i>3</i> / 1	OUTO	COME	M	0	2	5	0	2	3	1	
COU NA	RSE ME	AUTOMOBILE E	NGINEERING										
CO Desc	cription	Explain construction	and working of ignitio	n, transmission a	nd steering	syste	ms of	an auto	omobile	•			
LO Desc	cription	Describe constructio	n and working of an ig	nition system.									
				SCHEME (F STUDY	7							
S. No.		Learning Cor	ntent	Teaching – Learning Method	Descript T-L Pro			each Hrs.		ct. /Tut Irs.	LRs	Require	ed Remarks
1	systems ignition acid batte elements	and magneto ignition system, construction ery, dry battery elemen	tem, battery ignition on system, electronic and working of lead ats of charging system, types of lights used in ar wiring system	classroom teaching, demonstration,	Teacher very conduct assignment quiz/tutor make students.	to will ents/ rial to dents heir	04			02	board	outs, chal , PPT, tex charts, film.	
				SCHEME OF A	SSESSMI	ENT							
S. No.	Metho	od of Assessment	Description of A	Assessment	sessment Maximum Marks Resources Required						External / Internal		
1	P	aper pen test	Student will be asked construction and work ignition system composition	king of given	10			Te	Test paper + Rating scale				Internal
			ADDITIONAL INST	RUCTIONS FO	R THE H	OD/ F	'ACU	LTY (IF ANY	<i>Z</i>)			
				Part of progre	essive test-	II		<u> </u>					

RG	RGPV (Diploma Wing) Bhopal	\$	SCHEME FOR LEAR	NING	Br	anch (Code	C	ourse C	ode	CO Code	LO Code	Format No. 4	
		8/		OUTCOME		M	0	2	5	0	2	3	2	-
	URSE ME	AUTOMOBILE E	NGINE	EERING										
CO Des	cription	Explain construction	and wo	rking of ignition, power	r transmis	sion an	d steer	ing syste	ems of	an auto	nobile).		
LO Des	cription	Describe constructio	n and w	orking of a power trans	mission s	ystem o	f an au	ıtomobil	e.					
				SCI	неме о	F STU	DY							
S. No.		Learning Content		Teaching – Learning Method	Descri I	ption o	f T-L	Teac Hrs		Pract. Tut Hr	S.	LRs Rec	quired	Remarks
1	clutch, multi-pla details of for gear of gear mesh gea of prop propeller joint, wo	arrangement of of friction cl ional details of single constructional detail te clutch, construct centrifugal clutch, ne ratios in transmission boxes, working of ar box, working of ar box, syncromesh we reller shaft working shaft, working of un reking of differential, ty purpose of front axle,	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher the cont provide students will cor assignm quiz/tut students their kn	tents an handous. Teach duct hents/orial to spractic	d ats to her make	04		02	bo bo	andouts, coard, PPT, ook, charts	text		
				SCHEN	IE OF A	SSESS	MENT	7						
S. No.	Metho	od of Assessment	D	escription of Assessme	ent		imum arks			Resour	es Re	quired		External / Internal
1	Т	heory exam	exam Student will be asked to describe construction and working of given transmission system components		given		10		Que	estion pa	per + 1	rating scal	le	External
			ADDIT	IONAL INSTRUCTIONAL	ONS FO	R THE	HOD	FACU	LTY (IF ANY)			
				Part of e	nd semes	ter theo	rv exai	n	`					

RG	RGPV (Diploma Wing) Bhopal			SCHEME FOR LEARNING OUTCOME Branch Code					- 0			LO Code	Format No. 4	
			6 / • 1 ···	OUTC	OME	M	0	2	5	0 2 3 3				
	URSE ME	AUTO	MOBILE	ENGINEERING				·						
CO Des	cription	Explair	construction	on and working of ignitio	n, transmission and	d steer	ing syste	ems of a	n auto	mobile	•			
LO Des	cription	Describ	e construct	ion and working of a stee	ring system of an	automo	obile							
					SCHEME OI	F STU	DY							
S. No.	S. No. Learning Content		ontent	Teaching –Learning Method	Description of Process	T-L	Teach Hrs.		act. Hrs.	L	Rs Rec	quired		Remarks
1	Necessity		steering	Interactive classroom	Teacher will exp	lain	04	0	2		*	nalk board	·	
	system, caster, camber and		amber and	teaching,	the contents and					PPT,	text bo	ok, charts	,	

video film.

SCHEME OF ASSESSMENT

provide handouts to

students. Teacher will

conduct assignments/

quiz/tutorial to make

students practice their

knowledge.

king pin inclination, rack

and pinion steering system,

power

Steering linkages(1,2)

and

demonstration, quiz,

assignments,

tutorial

steering.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Student will be asked to describe construction and working of a given steering system components.	10	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RG	PV (Diplo	oma Wing) Bhopal	SCHEME FOR LI		Bra	nch C	ode	Cou	ırse C	ode	CO Code	LO Code	Format No. 4
2102	- (p	,w (,g) = · -pw	OUTCOM	TE	M	0	2	5	0	2	3	4	
	JRSE ME	STRENGTH OF	MATERIALS	'									
CO Desc	cription	Explain constructi	on and working of ignition, tr	ansmission and	steerir	g syst	ems o	f an autor	nobile	•			
LO Desc	cription	Identify a given co	omponent of ignition/transmis	sion/steering sy	stems	of an a	utom	obile.					
				SCHEME OF	STUD	Y							
S. No.	Le	earning Content	Teaching –Learning Method	Description of Process		Tea Hi		Pract. /Tut Hrs		LR	s Require	ed	Remarks
1	and worl	tration of construction, king of ignition, sion, steering syster	teaching,	Teacher will e the contents ar provide hando students. Teac will conduct assignments/ quiz/tutorial to students practi their knowledge	s and adouts to eacher et s/ ll to make actice			04	PP		, chalk bo book, cha n.		
			SC	HEME OF AS	SESSN	IENT							
S. No.	Metho	d of Assessment	Description of Asse	essment		ximu Iarks	m]	Resou	rces R	equired		External / Internal
1		Quiz	Student will be asked to idea components of ignition/ trans			03		Те	est pap	er + R	ating scale	,	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of term work

steering systems of an automobile.

RG	PV (Diplo	oma Wing) Bhopal	5	SCHEME FOR LEA	RNING	Br	anch (Code	Co	urse C	code	CO Code	LO Code	Format No. 4
	` 1	<i>87</i> 1		OUTCOME		M	0	2	5	0	2	4	1	
	JRSE ME	AUTOMOBILE	ENGINE	EERING										
CO Des	cription	Explain suspension	and brak	ing system, emission a	and noise c	ontrol c	of an au	ıtomobi	le.					
LO Des	cription	Describe constructi	on and w	orking of suspension a	nd braking	g system	ı.							
				SC	CHEME O	F STU	DY							
S. No.		Learning Content		Teaching – Learning Method	Descrip Pa	otion of rocess	T-L	Teac h Hrs.		t. /Tut rs.	L	Rs Requ	ired	Remarks
1	spring a system, front who for telefunctions used in a internal of disc brake. Tyres: Specifications and the system of telefunctions used in a system.	par suspension systement coil spring sustained coil spring sustained pendent suspensioned and rear wheel, escopic shock as of brakes, types of modern vehicles, wo expanding brake, wo te. Construction,	suspension system, leaf ension systems, leaf l spring suspension dent suspension for rear wheel, working shock absorber kes, types of brakes vehicles, working of ng brake, working of causes of tyre wear, Interactive classroom teaching, the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		outs, cha l, PPT, te s, video f	xt book,								
				SCHE	ME OF A	SSESS	MENT	Γ						
S. No.	Meth	od of Assessment	D	escription of Assessm	nent		imum arks]	Resour	ces Red	quired		External / Internal
1	7	Γheory exam	constru	t will be asked to action and working sion/braking nents.		1	10		Ques	stion pa	aper + r	ating sca	le	External
			ADDIT	TIONAL INSTRUCT	IONS FO	R THE	HOD	FACU	LTY (I	F AN	Y)			
				Part of	end semest	ter theo	ry exai	n			•			

RG	PV (Diplor	na Wing) Bhopal		SCHEME FOR	–	Br	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	- · (F	··· g / r ··-		OUTC	OME	M	0	2	5	0	2	4	2	
	JRSE ME	AUTOMOBILE	ENG	INEERING								'		
CO Des	cription	Explain suspension	n and	oraking system, em	ission and noise c	ontrol (of an au	omob	ile.					
LO Des	cription	State provisions of	Moto	or vehicle act of Inc	lia for vehicle reg	istratio	n, drivir	g lice	nse, em	ission a	nd nois	se control.		
					SCHEME O	F STU	DY							
S. No.	Learr	ning Content	Tea	ching –Learning Method	Description of Process	T-L	Teach Hrs.		Pract. ut Hrs.	I	Rs Re	quired		Remarks
1	with refer vehicle ac act, regist vehicles, o	driving license signals, noise	teach demo	onstration, quiz, nments,	Teacher will exp the contents and provide handout students. Teacher conduct assignment quiz/tutorial to restudents practice knowledge.	es to er will nents/ nake	04	00					·	
					SCHEME OF A	SSESS	MENT	'					'	
S. No.	Metho	d of Assessment		Description of A	ssessment		imum arks			Resour	ces Re	quired		External / Internal
1		Quiz	pro Inc	ident will be asked positions of Motor valia for vehicle registence/ emission /nois	ehicle act of tration/driving		04		Тє	est pape	r + Rat	ing scale		Internal
			AD	DITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	JLTY (IF ANY	<i>(</i>)			
					Part of ter	m work	ζ							

RG	PV (Diplor	na Wing) Bhopa	1	SCHEME FOR			anch C		Co	ourse C	code 2	CO Code	LO Code	Format No. 4
	JRSE ME	AUTOMOBILE	ENGI	NEERING		M	0	2	3	U		4	3	
CO Des	cription	Explain suspensio	n and br	aking system, emi	ssion and noise of	control o	of an aut	omob	ile.					
LO Des	cription	Identify a given co	omponer	nt of a given suspe	nsion/braking sy	stem.								
	-				SCHEME O	F STU	DY							
S. No.	Learr	ning Content	Teach	ning –Learning Method	Description of Process	fT-L	Teach Hrs.		Pract. ut Hrs.		LR	s Requir	ed	Remarks
1	Demonstration of construction and working of suspension and braking systems.		nstruction and working teaching, the contents and suspension and braking demonstration, quiz, the contents and provide handouts to		ts to er will nents/ make	to will ents/ ake		04	Handouts, chalk board, text book, charts, video and lab manual.					
					SCHEME OF A	SSESS	MENT							
S. No.	Metho	d of Assessment		Description of A	ssessment		dimum arks			Resour	ces Re	quired		External / Internal
1		oratory test by bservation	cons	ent will be asked truction and work ponents of a given ension/braking sys	ing of given		05	(Observat		edule/c es /rub	heck-list	/rating	External
			ADD	ITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	JLTY (IF AN	Y)			
				Pa	art of end semeste	er pract	ical exai	n						

RG	PV (Diploi	ma Wing) Bhopal		SCHEME FOI		Br	anch C	ode	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	` •	3, 1		OUTC	OME	M	0	2	5	0	2	4	4	
	JRSE ME	AUTOMOBILE	ENG	INEERING										
CO Des	cription	Explain suspension	n and l	oraking system, em	ission and noise c	ontrol o	of an au	omobi	ile.					
LO Des	cription	Measure exhaust g	ases o	f an automobile usi	ng exhaust gases	analyz	er/smo	ke met	ter.					
					SCHEME O	F STU	DY							
S. No.	Lear	ning Content	Tea	ching –Learning Method	Description of Process	T-L	Teach Hrs.		ract. it Hrs.		LRs	Require	d	Remarks
1	fitness, sr	emission test, moke meter, gases analyzer, onverter.	teach demo	onstration, quiz, nments, rial.	Teacher will exp the contents and provide handout students. Teacher conduct assignm quiz/tutorial to r students practice knowledge.	s to er will nents/ nake e their	04		04					
					SCHEME OF A	SSESS	MENT							
S. No.	Metho	d of Assessment		Description of A	ssessment		imum arks			Resour	ces Re	quired		External / Internal
1		oratory test by observation	exl exl	ident will be asked naust gases of an au naust gases analyze eter.	tomobile using		05	O	bservat		edule/c es /rubi	heck-list	/rating	External
			AD	DITIONAL INST	RUCTIONS FO	R THE	HOD/	FACU	LTY (IF ANY	<i>Z</i>)			
				P	art of end semeste	r practi	ical exa	n						

RGPV (Diplo	oma Wing) Bhopal	SCHEME FOR LEARNING	Branch Code			Course Code			Code	Code	Format No. 4
` •	ο, τ	OUTCOME	M	0	2	5	0	2	5	1	
COURSE NAME AUTOMOBILE ENGINEERING							·				
CO Description	Explain service and mai	intenance practices for an automobile.									
LO Description	O Description State differences between conventional, special purpose and modern vehicles.										
		ССИЕМЕ О	E CTI	DV							

			SCHEME OF STU	DΙ			
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Special purpose vehicles- tractor, motor grader, scrappers, excavators, dumper trucks, Modern vehicles -electric vehicles, CNG vehicles, Hybrid vehicles.	teaching, demonstration, quiz, assignments,	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	05	00	Handouts, chalk board, PPT, text book, charts, video film.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory exam	Student will be asked to differentiate between given conventional/special purpose/modern vehicles.	10	Question paper + rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

		SCHEME FOR LEARNING							Code	Code	Format No. 4
RGPV (Diplo	oma Wing) Bhopal	OUTCOME	M	0	2	5	0	2	5	2	Format No. 4
COURSE NAME	AUTOMOBILE ENC	GINEERING									
CO Description	Explain service and mai	intenance practices for an automobile.									
LO Description	Practice maintenance, se	ervicing and repairing procedures of	a giver	vehic	le.						

Branch 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	Maintenance of Vehicles: Need and types of maintenance, maintenance procedure of engine, transmission system, electrical system, braking system and steering mechanism, wheel balancing.	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	04	04	Handouts, chalk board, PPT, text book, charts, video film and lab manual.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Student will be asked to supervise maintenance of a given engine/ transmission system/ electrical system/braking system/steering mechanism/wheel alignment and balancing of an automobile.	10	Observation schedule/check-list /rating scales /rubrics	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester practical exam

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING		ING	Branch Code		Code	e Course Code		ode	CO Code	LO Code	Format No. 4	
		0	OUTCOME		M	0	2	5	0	2	5	3	101111at 110. 4	
	URSE ME	AUTOMOBILE E	NGINEERING											
CO Des	cription	Explain service and a	naintenance pract	ices for an auton	nobile.									
LO Des	cription	Identify problems, th	eir causes and pos	ssible remedies o	of a give	n fault	y auto	mobile.						
				SCHE	ME OF	STU	ΟY							
S. No.		Learning Conte		Teaching – Learning Method	Descr L	iption Proce		Teach Hrs.		Pract. /Tut Hrs.		LRs Red	quired	Remark
1	equipment nut runne polishers buffers ,c ,caulking trolley, ja ,worksho dollies, to starters, h compress	and Service Station: Int tools (impact and research fastening, grind), hammers and scalers utters, nibbler, air file gun, riveters, jack statcks balloon, jacks air, persses, workshop corque wrenches, work hoses, couplings, lubridors) and service process, causes and remedicates.	atchet wrenches, lers, sanders and s, drills, tire s, engraving pen nds bottle, jacks hydraulic jacks ranes, wheel light, jump cation, balancers, edure	Interactive classroom teaching, demonstratio n, quiz, assignments, tutorial	Teacher explain content provided to study assign quiz/tu make a practice knowless	n the ats and le hand lents. er will ct ments, utorial studen ce their	louts to ts	04	04		Handouts, chalk board, PPT, text book, charts, video film and lab manual		al.	
				SCHEME	OF AS	SESS	MENT	Γ						
S. No.	Metho	od of Assessment	Description	of Assessment			imum ırks		Resources Required			External / Internal		
1		ooratory test by observation	Student will be a problems, their c remedies of a give automobile.	auses and possib	ble	1	.0	Obs	Observation schedule/check-list /rating scales /rubrics		External			
			ADDITIONAL I	NSTRUCTION	IS FOR	THE	HOD/	FACUL	TY (IF ANY	<i>(</i>)			
				Part of end s	emester	practi	cal exa	ım						

DIPLOMA IN MECHANICAL ENGINEERING SEMESTER: FIFTH SEMESTER

SCHEME: OCBC COURSE CODE: 502

NAME OF THE COURSE: AUTOMOBILE ENGINEERING

LIST OF SUGGESTED EXPERIMENTS

S. NO.	LO	NAME OF EXPERIMENTS
1	11	Demonstration of construction and working of components of an automobile chassis using engine/model/laboratory setup.
2	12,13	Demonstration of construction and working of components of a petrol engine using engine/model/laboratory setup.
3	12,13	Demonstration of construction and working of components of a diesel engine using engine/model/laboratory setup.
4	21,24	Demonstration of construction and working of cooling system using equipment/model/setup of a petrol engine.
5	21,24	Demonstration of construction and working of cooling system using equipment/model/setup of a diesel engine.
6	22,24	Demonstration of construction and working of lubrication system using equipment/model/setup of a petrol engine.
7	22,24	Demonstration of construction and working of lubrication system using equipment/model/setup of a diesel engine.
8	23,24	Demonstration of construction and working of fuel feed system using equipment/model/setup of a petrol engine.
9	23,24	Demonstration of construction and working of fuel feed system using equipment/model/setup of a diesel engine.
10	41,43	Demonstration of construction and working of suspension system of an automobile using equipment/model/setup.
11	41,43	Demonstration of construction and working of braking system of an automobile using equipment/model/setup.
12	44	Measure exhaust gases emissions of an automobile using exhaust gases analyzer.
13	52,53	Servicing of
		1) Two wheelers
		2) Three wheelers3) Four wheelers
14	52,53	Engine tuning and adjustment for
14	32,33	1) Petrol engine
		2) Diesel engine
15	52,53	Identification of starting troubles and their rectifications for
		1) Petrol engine
		2) Diesel engine
16	52,53	Rectification procedure for:
		(a) Air bleeding (b) Broke adjustment
		(b) Brake adjustment(c) Problems in carburettor
		(d) Wheel alignment for a four wheelers
17	52,53	Battery servicing and charging.
18	52,53	Repair of punctured tyre and re-treading of tyres.
19	52,53	Study of an auto servicing centre:
		(a) Layout (b) Instruments/ Tools used (c) Servicing procedures.
20	52,53	Visit of a local auto service centre and prepare a report in respect of:
		(a) Layout (b) Instruments/ Tools used (c) Servicing/ Reconditioning/ Maintenance
		procedure.
21	52,53	Collect specifications for 2/3/4 wheeler and prepare a comparison table and their manuals.

RGPV (DIPLOMA WING) BHOPAL				CULUM FOR THE DURSE	FORMA	Т-3	Sheet No. 1/3		
Branch		Mechanical Engineering			Semester		V		
Course Code	502		Course Name	AUTOMOBI	LE ENGIN	EERI	NG		
Course Outco	ome 1		ain construction an automobile.	d working of chassis a	nd engine	Teach Hrs	Marks		
Learning Ou	tcome 11	Iden	tify different compo	onents of a given chass	is layout.	02+02	03		
Contents		Meaning of automobile, elements of automobile, classification of automobile, layout of chassis, its parts and operating systems.							
Method of As	ssessment	Quiz	(Part of term work	()					
Learning Ou	tcome12	com	bustion engine.	nd working of an inter		04+02			
Contents		engi diese	nes, merits and den el engines, firing o	ation of I.C. engines, to merits, scavenging, courder, valve timing dia	omparison of				
Method of As	ssessment		ory exam (Part of er			1			
Learning Ou	tcome 13	Identify a given engine component in a given internal combustion engine model. 04+04 10							
Contents		Basic engine components, cylinder block, cylinder head, gaskets, cylinder liners, types of cylinder liners, piston and piston pin, piston rings, types of piston rings, connecting rod, crank shaft, cam shaft, crankcase, engine valves, flywheel and governor.							
Method of As	ssessment	Laboratory test by observation(Part of lab work)							
Course Outco	ome 2	Explain construction and working of cooling, lubricating and fuel feed systems of an automobile.							
Learning Outcome 21		Describe construction and working of a given cooling system.					2 10		
Contents		Necessity of cooling system, types of cooling system-air cooling and water cooling, air cooling system, types of water cooling system, thermosyphon system and pump circulation system, advantages and disadvantages of air cooling and water cooling systems, the components of water cooling system –fan, radiator, pump and thermostat.							
Method of As	ssessment		er pen Test (Part of						
Learning Outcome 22		Describe construction and working of a given lubrication system. 04+02 10							
Contents		The necessity of lubrication system, S.A.E rating of lubricants, types of lubrication system, petrol lubrication and high pressure lubrication system.							
Method of As	ssessment	Theory exam (Part of end semester exam)							
Learning Outcome 23			Describe construction and working of a given fuel system. 04+02 10						
Contents		Conventional fuels and alternative fuels: cetane and octane numbers, types of carburettors, working of simple carburettor, multi point and single point fuel injection systems, different fuel transfer pumps, working of S.U							

	electrical and A.C mechanical pump, fuel filters, fuel injection pump, fuel						
	injectors.						
ethod of Assessment	Theory exam (Part of end semester exam)						
arning Outcome 24	Identify a given component of a given	00+04	10				
	cooling/lubricating/fuel feed systems						
ntents	Demonstration of construction and working of cooling,	lubricati	ng, fuel				
	feed systems						
ethod of Assessment	Laboratory test by observation (Part of lab work)	•					
ourse Outcome 3	Explain construction and working of ignition,	Teach	Marks				
	transmission and steering systems of an automobile.	Hrs					
arning Outcome 31	Describe construction and working of an ignition system.	04+02	10				
ontents	Introduction to ignition system, battery ignition systems an	-					
	ignition system, electronic ignition system, construction an		_				
	lead acid battery, dry battery elements of charging system,						
	starting system, types of lights used in the automobile: cuto	out relay,	car				
	wiring system						
ethod of Assessment	Paper pen Test (Part of progressive test-II)	04.02	10				
arning Outcome 32	Describe construction and working of a power	04+02	10				
	transmission system of an automobile						
ntents	General arrangement of clutch, principle of friction clutche						
	details of single plate clutch, constructional details of multi	-					
	constructional details of centrifugal clutch, necessity for ge						
	transmission, types of gear boxes, working of sliding mesh gear box,						
	working of constant mesh gear box, syncro mesh working of propeller shaft						
	working of propeller shaft, working of universal joint, working of differential, types of rear axle, purpose of front axle,						
ethod of Assessment	Theory exam (Part of end semester exam)						
arning Outcome 33	Describe construction and working of a steering system	04+02	10				
arming Outcome 33	of an automobile	01102	10				
ntents	Necessity of steering system, caster, camber and king pin	inclination	on, rack				
	and pinion steering system, and power steering. Steering lin						
ethod of Assessment	Theory exam (Part of end semester exam)	<u> </u>	,				
arning Outcome 34	Identify a given component of	00+04	03				
8	ignition/transmission/steering systems of an automobile.						
ntents	Demonstration of construction and working of ignition, tra	nsmissio	n,				
	steering systems		,				
ethod of Assessment	Quiz (Part of term work)						
urse Outcome 4	Explain suspension and braking system, emission and	Teach	Marks				
	noise control of an automobile.	Hrs					
arning Outcome 41	Describe construction and working of suspension and	04+02	10				
J	braking system.						
ntents	Necessity of suspension system, torsion bar suspension sys	tems, lea	f spring				
	and coil spring suspension system, independent suspension						
	and rear wheel, working of telescopic shock absorber fun						
	types of brakes used in modern vehicles, working of in						

	brake, working of disc brake.						
	Tyres: Construction, Types, Specifications, causes of tyre wear, measures						
	taken to reduce tyre wear						
Method of Assessment	Theory exam (Part of end semester exam)						
Learning Outcome 42	State provisions of Motor vehicle act of India for vehicle	04+00	04				
	registration, driving license, emission and noise control.						
Contents	Their hazards and controls with reference to motor vehic	cle act. M	Iotor				
	vehicle act, registration of vehicles, driving license and	traffic sig	gnals.				
	noise pollution.						
Method of Assessment	Quiz (Part of term work)	1	T				
Learning Outcome 43	Identify a given component of a given	00+04	05				
	suspension/braking system.						
Contents	Demonstration of construction and working of suspension	and brak	ing				
	systems						
Method of Assessment	Laboratory test by observation (Part of end semester practic						
Learning Outcome 44	Measure exhaust gases of an automobile using exhaust	04+04	05				
	gases analyzer/smoke meter.						
Contents	Exhaust emission test, fitness, smoke meter, exhaust gas	ses analyz	zer,				
	catalyst converter.						
Method of Assessment	Laboratory test by observation(Part of end semester practic	al exam)					
Course Outcome 5	Explain service and maintenance practices for an	Teach	Marks				
	automobile.	Hrs					
Learning Outcome 51	State differences between conventional, special purpose	05+00	10				
-	and modern vehicles.						
Contents	Special purpose vehicles- tractor, motor grader, scrap	pers, exc	avators,				
	dumper trucks,						
	Modern vehicles -electric vehicles, CNG vehicles, Hybrid	vehicles.					
Method of Assessment	Theory exam (Part of end semester exam)	1					
Learning Outcome52	Practice maintenance, servicing and repairing procedures	04+04	10				
	of a given vehicle.						
Contents	Maintenance of Vehicles: Need and types of maintenar						
	maintenance procedure of engine, transmission system,						
N# 41 1 C A	system, braking system and steering mechanism. wheel b		<u>.</u>				
Method of Assessment	Laboratory test by observation(Part of end semester practic	1	10				
Learning Outcome 53	Identify problems, their causes and possible remedies of	04+04	10				
Contents	a given faulty automobile.	ools (im	neet				
Contents	Garage and Service Station: Types, layout, equipment t and ratchet wrenches, nut runners and fastening, grinders, s						
	polishers, hammers and scalers, drills, tire buffers, cutters						
	files, engraving pen ,caulking gun ,riveters ,jack stands bot		uII				
	trolley, jacks balloon, jacks air, hydraulic jacks ,workshop	•					
	workshop cranes, wheel dollies, torque wrenches ,work light, jump						
	starters, hoses ,couplings ,lubrication, balancers, compresso		service				
	procedure (problems, causes and remedies).	,					
	procedure (problems, eduses and remedies).						

Method of Assessment Laboratory test by observation (Part of end semester practical exam)