RGPV(DiplomaWing)Bhopal	SEMESTERTEACHINGLEARNING&ASSESSMENTPLAN	FORMAT-6

NAMEOF PROGRAMME	THREEYEARSDIPLOMA	SCHEME	OBE	IMPLEMENTINGYEAR	2020-21

BRANCHCODE	A03	NAMEOF BRANCH	AUTOMOBILEENGINEERING	SEMESTER	SIXTH

S. No	COURSEDETAILS					T-LPLAN		ASSESSMENTPLAN								
	COURSE CODE	COURSE NAME	PAPER CODE	No. of COs	No. of LOs	Total T-L Hrs.	T-L Hrs. /Week	Internal Assessment		ExternalAssessment(UniversityExam)						Grand Total of Marks
										TheoryPaper			PracticalExam*			
								No.of LOs	Total Marks	No.of LOs	Total Marks	Duration	No.of LOs	Total Marks	Duration	
1	601	AUTOMAINT.SERVICEAND REPAIRS	-	05	15	105	07	09	40	-	-	-	06	60	3Hrs.	100
2	602	AUTOBUSINESS MANAGEMENT	6960	04	10	90	06	05	30	05	70	03HRs.	-	-	-	100
3	603	AUTOLEGISLATION	6961	05	14	90	06	06	30	08	70	03Hrs.	-	-	-	100
4	604	PROJECTWORK	-	03	07	105	07	04	60	-	-	-	03	40	03Hrs.	100
5	605	PROFESSIONAL DEVELOPMENT-VI	-	03	06	60	04	06	75	-	-	-	-	-	-	75
TOTAL				20	52	450	30	30	235	13	140	-	09	100	-	475
No.ofTheoryPapers												02	No.ofPracticalExams02			-

ExamforLOs(Psycho+Affect.)perbatch of20students*

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 1/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	601	Course Name	Auto Maintenance Service & Repairs

Course Outcome 1	Student will be able to maintain /repair the given car engine	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to practice checkup/ daily/ running maintenance the given car**	6	3
Contents	Need and importance of vehicle periodic maintenance and service, maintenance schedules, periodic checkup, daily/ running maintenance, daily inspection, check-up and top up-oil level, belt check-up, checking battery condition, engine cooling system, air conditioning system, tires		
Method of Assessment	Laboratory assignment		
Learning Outcome 2	**Student will be able to trouble-diagnosis the given problematic car engine**	7	10
Contents	• General Procedure of diagnosis cause of a problem • Common engine problems and their probable causes and solutions. • Introduction to engine On Board Diagnostic (OBD), Misfire detection, diagnosis for ignition faults, Fuel system and Injection system faults in SI and CI engines.		
Method of Assessment	Laboratory exam		
Learning Outcome 3	**Student will be able to plan repair for the given problem in the given car engine**	7	5
Contents	• Need for planning the repairs, breaking the repair procedure into small tasks; assessment of tools, equipments, devices, consumables, utilities, spare parts required to complete each task, format for repair plan • Preparation of repair plans for following repair activities after breaking them into small tasks		
Method of Assessment	Laboratory assignment		
Learning Outcome 4	**Student will be able to perform given car engine repair / maintenance related specific activity**	8	5
Contents	Car engine related following common repair/ maintenance related specific activities which are listed below*		
Method of Assessment	Laboratory assignment		

***Refer Format -4 for the list**

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 2/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	601	Course Name	Auto Maintenance Service & Repairs

Course Outcome 2	To maintain / repair the given transmission and transaxle / Drive train and Axle	T-L Hrs	Marks
Learning Outcome 1	**Student will be able trouble-diagnosis the given problematic car transmission and transaxle / Drive and Axle**	5	4
Contents	Trouble diagnosis of Common problems in clutch, synchromesh gearbox, automatic transmission, transaxle , drive and differential listed below*		
Method of Assessment	Laboratory assignment		
Learning Outcome 2	**Student will be able to plan repair for the given problem in the given car transmission and transaxle / Drive train and Axle.**	6	10
Contents	Preparation of repair plan for following repairs related to clutch, synchromesh gearbox, automatic transmission, transaxle, drive and differential		
Method of Assessment	Laboratory exam		
Learning Outcome 3	**Student will be able to perform car transmission and transaxle / Drive train and Axle related given specific repair / maintenance activity.**	6	5
Contents	Car transmission and transaxle / Drive train and Axle related following common repair/ maintenance related specific activities which are listed below*		
Method of Assessment	Laboratory assignment		

***Refer Format -4 for the list**

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 3/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	601	Course Name	Auto Maintenance Service & Repairs

Course Outcome 3	Student will be able to maintain / repair given car brake system	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to maintain / repair the given problematic car brake system**	6	4
Contents	Trouble diagnosis of following common problems in car disc , drum and parking brake systems which are listed below*		
Method of Assessment	Laboratory assignment		
Learning Outcome 2	**Student will be able to plan repair for the given problem in the given car brake system**	5	10
Contents	Preparation of repair plans for following repairs related to car disc, drum and parking brake systems		
Method of Assessment	Laboratory exam		

***Refer Format -4 for the list**

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 4/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	601	Course Name	Auto Maintenance Service & Repairs

Course Outcome 4	Student will be able to maintain / repair given car suspension and steering system / body or its component	T-L Hrs	Marks
Learning Outcome 1	Student will be able to diagnose the trouble in the given suspension and steering system / body or its component	9	10
Contents	Trouble diagnosis of common problems in car suspension system, steering system, car body and its components as listed below*		
Method of Assessment	Laboratory exam		
Learning Outcome 2	Student will be able to plan repair for the given problem in the given suspension and steering system / body or its component	10	10
Contents	Preparation of repair plan for following repairs related to suspension and steering system / body or its component		
Method of Assessment	Laboratory exam		
Learning Outcome 3	Student will be able to perform given suspension, steering system, body or its component related specific repair / maintenance related activity	11	5
Contents	Car suspension, steering system, body or its component related following specific repair/ maintenance related specific activities which are listed below*		
Method of Assessment	Laboratory assignment		

***Refer Format -4 for the list**

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 5/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	601	Course Name	Auto Maintenance Service & Repairs

Course Outcome 5	Student will be able to maintain / repair given car electrical / electronic system	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to diagnose the trouble in the given problematic car electrical / electronic system**	5	4
Contents	Trouble diagnosis of Common problems in car starting system, ignition system, charging system, lighting system and wiring and electronic systems as listed below*		
Method of Assessment	Laboratory assignment		
Learning Outcome 2	**Student will be able to plan repair for the given problem in the given car electrical / electronic system.**	7	10
Contents	Preparation of repair plan for following repairs related to car starting system, ignition system, charging system, lights & wiring system and electronic system		
Method of Assessment	Laboratory exam		
Learning Outcome 3	**Student will be able to perform given car electrical / electronic system related unique repair / maintenance activity**	7	5
Contents	Testing and repair /maintenance related specific activities for car starting system, ignition system, charging system, lights & wiring system and electronic system		
Method of Assessment	Laboratory assignment		

***Refer Format -4 for the list**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	1	1	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain /repair the given car engine**
LO Description	**Student will be able to practice checkup/ daily/ running maintenance of 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	Need and importance of vehicle periodic maintenance and service, maintenance schedules, periodic checkup, daily/ running maintenance, daily inspection, check-up and top up-oil level, belt check-up, checking battery condition, engine cooling system, air conditioning system, tires	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content / activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	03	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to perform given car periodic checkup related three specific activities in front of teacher	03	Rating scale	**Internal**

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of periodic maintenance / daily checkup activity to be learned:-

1. **Checking and maintaining engine oil and coolant levels**
2. **Checking battery condition**
3. **Checking engine cooling system /air conditioning system**
4. **Checking of car brakes**
5. **Checking of engine belt condition + air filter**
6. **Checking tires**

Assessment Criteria: - 1. Correctness of first activity (01 marks)

2. Correctness of second activity (01 marks)

3. Correctness of third activity (01 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	1	2	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain /repair the given car engine**
LO Description	**Student will be able to trouble-diagnosis the given problematic car engine**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs	Pract /Tut Hrs	LRs Required	Remarks
1	• General Procedure of diagnosis cause of a problem • Common engine problems and their probable causes and solutions. • Introduction to engine On Board Diagnostic (OBD), Misfire detection, diagnosis for ignition faults, Fuel system and Injection system faults in SI and CI engines.	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content / activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	04	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin or its equivalent • Advanced Automotive Fault Diagnosis by Tom Denton 2011 • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory exam	Student will be asked to find the cause of problems in two given engine cases in front of external examiner	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of common engine problems for which diagnosis of cause is to be learned:-

1. **Coolant level is frequently reducing**
2. **engine is not starting**
3. **engine is overheating**
4. **excessive emissions from car**
5. **car is consuming too much oil**
6. **car fuel average is gradually reducing**
7. **Engine occasionally misfires**

Assessment criteria (for each case):-

1. Correctness of adopted procedure (3marks)
2. Correctness of identified cause (2 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	1	3	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain /repair the given car engine**
LO Description	**Student will be able to plan repair for the given problem in the given car engine**

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 for planning the repairs, breaking the repair procedure into small tasks; assessment of tools, equipments, devices, consumables, utilities, spare parts required to complete each task, format for repair plan • Preparation of repair plans for following repair activities after breaking them into small tasks	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content / activities to students, student will practice to prepare plan under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	04	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to prepare repair plan for the two given repair works and submit them to teacher	05	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair works for which student will learn to prepare the repair plans:-

1. **Removing and installing coolant pump and radiator for the given engine**
2. **removing and installing the mechanical fuel pump for the given engine**
3. **removing the crankshaft from the given engine**
4. **installing pistons con-rods in the given engine**
5. **Changing cylinder head gasket of the given engine**

FORMAT FOR REPAIR PLAN (Lab assignment)

1	General Information	Date		LO No.	
		Name of student			
		Roll No.			
		Name of car sub-assembly			
		Name of component(s)			
2	Description of repair procedure and resources	A. Description of detailed repair procedure			
		B. Sketch related to repair			
		A. Measuring tools required			
		B. Repair tools required			
		C. Machines /devices / equipments required			
		D. Consumables required			
		E. Spare parts required			
		F. Approximate time required for repairs			
4	Additional information (if required)				
5.	Signature of student				

Assessment criteria:-

1. Extent of appropriateness of required tools, machines, devices (03 marks)
2. Extent of appropriateness of required consumables ,spare parts and time (02 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	1	4	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain /repair the given car engine**
LO Description	**Student will be able to perform given car engine repair / maintenance related specific activity**

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 engine related following common repair/ maintenance related specific activities which are listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content / activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	03	05	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to perform given engine repair related two specific activities in front of the teacher	05	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair related activities to be learned by the student:-

1. **removing /installing coolant pump / radiator**

2. **removing and testing the thermostat valve**
3. **removing and replacing worn con rod bearing sleeves**
4. **installing piston con-rod assemblies in the given engine**
5. **Adjusting the valve timing and drive belt tension**
6. Changing cylinder head gasket

Assessment criteria* :-

1. Extent to which SOP has been followed (03 marks)
2. Extent to which student used appropriate tools (01marks)
3. Extent to which student used tools appropriately (01 marks)

***Note: - Give marks out of 5 for each activity and finally scale down the obtained sum of two activities to half and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	2	1	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair the given transmission and transaxle / Drive train and Axle**
LO Description	**Student will be able to trouble-diagnosis the given problematic car transmission and transaxle / Drive and Axle**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract /Tut Hrs	LRs Required	Remarks
1	Trouble diagnosis of Common problems in clutch, synchromesh gearbox, automatic transmission, transaxle , drive and differential listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content / activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	3	2	• A Practical Approach to Motor Vehicle Engineering and Maintenance 3rd Edition by Allan Bonnick • Vehicle maintenance and garage practice by JigarA.DoshiDhruU.Panchal, JayeshP.Maniar. 2014. • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to find the cause of problems in three given car transmission and transaxle / Drive and Axle cases in front of teacher	04	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of common problems of car transmission and transaxle / drive and Axle for which diagnosis of cause is to be learned:-

1. **Clutch slips while engaged**
2. **Clutch chatters or grabs while engaging**
3. **Clutch paddle pulsates**
4. **Clutch pedal stiff**
5. **Hard shifting in to gear**
6. **Gears clash while shifting**

Assessment criteria (for each case)*:-

1. Correctness of adopted procedure (2 marks)
2. Correctness of identified cause (2 marks)

***Note: - Give marks out of 4 for each trouble diagnosis and finally scale down the obtained sum of three activities to one third and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	2	2	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair the given transmission and transaxle / drive train and axle**
LO Description	**Student will be able to plan repair for the given problem in the given car transmission and transaxle / drive train and axle.**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract /Tut Hrs.	LRs Required	Remarks
1	Preparation of repair plan for following repairs related to clutch, synchromesh gearbox, automatic transmission, transaxle , drive and differential	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content /activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	3	3	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • John Doke "Fleet Management", McGraw-Hill Co. 1984. • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory exam	Student will be asked to prepare repair plans for the two given repair works and submit them to teacher	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair works for which student will learn to prepare the repair plans:-

1. **Disassembling the given single plate friction clutch assembly**

2. **Disassembling the given synchromesh gearbox**
3. **Disassembling the given differential**

FORMAT FOR REPAIR PLAN (Lab assignment)

1	**General Information**	**Date**		**LO No.**	
		Name of student			
		Roll No.			
		Name of car sub-assembly			
		Name of component(s)			
2	**Description of repair procedure and resources**	**C. Description of detailed repair procedure**			
		D. Sketch related to repair			
		G. Measuring tools required			
		H. Repair tools required			
		I. Machines /devices / equipments required			
		J. Consumables required			
		K. Spare parts required			
		L. Approximate time required for repairs			
4	**Additional information (if required)**				
5.	**Signature of student**				

Assessment criteria (for each repair plan)* :-

1. Extent of appropriateness of required tools, machines, devices (05 marks)
2. Extent of appropriateness of required consumables ,spare parts and time (05marks)

***Note: - Give marks out of 10 for each repair plan and finally scale down the obtained sum of two into half and rounded to higher side whole number (if**

necessary).

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	2	3	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair the given transmission and transaxle / Drive train and Axle**
LO Description	**Student will be able to perform car transmission and transaxle / Drive train and Axle related given specific repair / maintenance activity.**

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 transmission and transaxle / Drive train and Axle related following common repair/ maintenance related specific activities which are listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content /activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	03	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Automotive technology a system approach 5th edition by Jack Erjavec, Delmar USA • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to perform given engine repair related two specific activities in front of the teacher	05	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair related activities to be learned by the student:-

1. **Adjustment of clutch paddle and clutch free travel**
2. **Replacing clutch plate with worn lining with new one**
3. **Removing the universal joint**
4. **Checking wheel bearing condition**
5. **Replacing axle bearing and seals**
6. **Adjustment of, shift-linkage of given gear-box, which is operated through gear shift lever**

Assessment criteria* :-

1. Extent to which SOP has been followed (03 marks)
2. Extent to which student used appropriate tools (01marks)
3. Extent to which student used tools appropriately (01 marks)

***Note: - Give marks out of 5 for each activity and finally scale down the obtained sum of two activities to half and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	3	1	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair given car brake system**
LO Description	**Student will be able to maintain / repair the given problematic car 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	Trouble diagnosis of following common problems in car disc , drum and parking brake systems which are listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content /activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	03	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to perform trouble diagnosis for the given three problem cases related to car braking system in front of teacher	04	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of common problems of car disc, drum and parking brake systems for which diagnosis of cause is to be learned:-

1. **Pedal goes to floor, loss of paddle reserve**

2. **Car pulls to one side when applying brakes**
3. **Soft or spongy pedal**
4. **Poor braking, requiring excessive paddle force**
5. **Brakes grab**
6. **Noisy brakes**
7. **One or all brakes drag**
8. **Car tends to move even after applying parking brakes**

Assessment criteria (for each case)*:-

1. Correctness of adopted procedure (2 marks)
2. Correctness of identified cause (2 marks)

***Note: - Give marks out of 4 for each trouble diagnosis and finally scale down the obtained sum of three activities to one third and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	3	2	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair given car brake system**
LO Description	**Student will be able to plan repair for the given problem in the given car 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	Preparation of repair plans for following repairs related to car disc, drum and parking brake systems	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content/ activities to students, student will practice the activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	03	02	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory exam	Student will be asked to perform given car brake system repair / maintenance related two specific activities in front of examiner	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair works for which student will learn to prepare the repair plans:-

1. **Remove, inspect and /or replace brake shoes/ pads , lubricate and re-assemble**

2. **Remove, inspect brake drum /caliper assembly; measure and compare with specifications, take corrective actions if necessary**
3. **Retract and re-adjust caliper piston / Pre-adjust brake shoes and parking brake; install brake drums /disc caliper, brake pads /hub assemblies and wheel bearings; make final checks and adjustments**
4. **Bleed and/ or flush brake system and adjust pedal travel**

FORMAT FOR REPAIR PLAN (Lab assignment)

1	**General Information**	**Date**		**LO No.**	
		Name of student			
		Roll No.			
		Name of car sub-assembly			
		Name of component(s)			
2	**Description of repair procedure and resources**	**E. Description of detailed repair / inspection procedure**			
		F. Sketch related to repair / inspection			
		M. Measuring tools required			
		N. Repair tools required			
		O. Machines /devices / equipments required			
		P. Consumables required			
		Q. Spare parts required			
		R. Approximate time required for repairs			
4	**Additional information (if required)**				
5.	**Signature of student**				

Assessment criteria (for each repair plan)* :-

1. Extent of appropriateness of required tools, machines, devices (05 marks)

2. Extent of appropriateness of required consumables ,spare parts and time (05marks)

***Note: - Give marks out of 10 for each repair plan and finally scale down the obtained sum of two into half and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	4	1

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair given car suspension and steering system / body or its component**
LO Description	**Student will be able to diagnose the trouble in the given suspension and steering system / body or its 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	Trouble diagnosis of common problems in car suspension system, steering system, car body and its components as listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content activities to students, student will practice the content activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	05	04	• Book:- Automotive mechanics by W.H. Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipment's	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory exam	Student will be asked to find the cause of problems in two given engine cases in front of external examiner	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Trouble diagnosis of following problems will be learned by the student:-

1. **Hard steering**

2. **Excessive play in steering**
3. **Wandering of the car**
4. **One brake drags**
5. **Soft or spongy brake pedal**
6. **Requires excessive brake pedal force**
7. **Improper suspension height**
8. **Suspension topping or bottoming out**
9. **Noise / vibrations from body component or their joints**
10. **Removal of paint strips from surface of body parts**

Assessment criteria (for each case):-

1. Correctness of adopted procedure (3 marks)
2. Correctness of identified cause (2 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code	Course Code	CO Code	LO Code	Format No. 4
		A 0 3	6 0 1	4	2	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain/repair given car suspension and steering system / body or its component**
LO Description	**Student will be able to plan repair for the given problem in the given suspension and steering system / body or its 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	Preparation of repair plan for following repairs related to suspension and steering system / body or its component	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content activities to students, student will practice the content activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	05	05	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory exam	Student will be asked to prepare repair plans for the two given repair works and submit them to external examiner	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair works for which student will learn to prepare the repair plans:-

1. **Check, adjust /align the steering geometry of the given car wheels**

2. **Remove, inspect, replace, rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.**
3. **Remove, inspect, replace the given leaf spring/ coil spring**
4. **Remove, inspect, and repair given shock absorber.**
5. **Remove, inspect and paint the given car body panel**
6. **Remove, inspect and remove the dent from the given car body panel**

FORMAT FOR REPAIR PLAN (Lab assignment)

1	**General Information**	**Date**		**LO No.**	
		Name of student			
		Roll No.			
		Name of car sub-assembly			
		Name of component(s)			
2	**Description of repair procedure and resources**	• **Description of detailed repair / inspection procedure**			
		• **Sketch related to repair / inspection**			
		• **Measuring tools required**			
		• **Repair tools required**			
		• **Machines /devices / equipments required**			
		• **Consumables required**			
		• **Spare parts required**			
		• **Approximate time required for repairs**			
4	**Additional information (if required)**				
5.	**Signature of student**				

Assessment criteria (for each repair plan)* :-

1. Extent of appropriateness of required tools, machines, devices (05 marks)

2. Extent of appropriateness of required consumables ,spare parts and time (05marks)

***Note: - Give marks out of 10 for each repair plan and finally scale down the obtained sum of two into half and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	4	3	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain/repair given car suspension and steering system / body or its component**
LO Description	**Student will be able to perform given suspension, steering system, body or its component related specific repair / maintenance related activity**

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 suspension, steering system, body or its component related following specific repair/ maintenance related specific activities which are listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content activities to students, student will practice the content activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	06	05	• Book:- Automotive mechanics by W.H.Crouse and Anglin Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to perform given engine repair / maintenance related two specific activities in front of teacher	05	Rating scale	**Internal**

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair related activities to be learned by the student:-

1. **Remove, inspect, replace, and/or adjust power steering pump drive belt.**

2. **Inspect and replace power steering hoses and fittings.**
3. **Inspect, remove, and/or replace upper and lower control arms, bushings, shafts, and rebound bumpers**
4. **Remove, inspect, replace, and/or adjust suspension system coil springs/leaf springs.**
5. **Inspect, remove, and/or replace strut rods and bushings.**
6. **Inspect, remove, and/or replace upper and/or lower ball joints.**
7. **Inspect, remove, and/or replace steering knuckle assemblies.**
8. **Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly.**
9. **Perform tyre rotation in a given vehicle**
10. **Remove/refinish car body dents**

Assessment criteria* :-

1. Extent to which SOP has been followed (03 marks)
2. Extent to which student used appropriate tools (01marks)
3. Extent to which student used tools appropriately (01 marks)

***Note: - Give marks out of 5 for each activity, sum them and reduce the sum by multiplying it by ½ and round off to next whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	5	1	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	**Student will be able to maintain / repair given car electrical / electronic system**
LO Description	**Student will be able to diagnose the trouble in the given problematic car electrical / electronic 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	Trouble diagnosis of Common problems in car starting system, ignition system, charging system, lighting system and wiring and electronic systems as listed below	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content activities to students, student will practice the content activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	03	02	Book:- • Automotive mechanics by W.H.Crouse and Anglin • Automotive electrical and electronics By PL KOHLI Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to diagnose trouble for the two given problems in the car electrical and / or electronic system in front of teacher	04	Rating Scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of common problems of car electrical and electronic systems for which diagnosis of cause is to be learned:-

1. **No cranking, lights stay bright/dim heavily/dim slightly/go out/ no lights at all**
2. **Charging system is under-charging /over charging the battery**
3. **Battery does not stay charged / corroded terminals**
4. **Malfunctioning of sensors in ECU**
5. **Engine fails to start but cranks normally/ backfires**
6. **Engine runs but misses/ backfires**
7. **Lights/ Horn/windshield wipers are not working**

Assessment criteria (for each case)*:-

1. Correctness of adopted procedure (2 marks)
2. Correctness of identified cause (2 marks)

***Note: - Give marks out of 4 for each trouble diagnosis and finally scale down the obtained sum of two activities to half and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	5	2	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	Student will be able to maintain / repair given car electrical / electronic system
LO Description	Student will be able to plan repair for the given problem in the given car electrical / electronic 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	Preparation of repair plan for following repairs related to car starting system, ignition system, charging system, lights & wiring system and electronic system	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content activities to students, student will practice the content activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	04	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin • Automotive electrical and electronics By PL KOHLI Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipments	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory exam	Student will be asked to prepare repair plans for the two given repair works and submit them to examiner	10	Rating scale	External

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair works for which student will learn to prepare the repair plans:-

1. **Inspect and clean battery; fill battery cells; check battery cables, connectors and clamps**
2. **Removing and installing starting motor /alternator**
3. **Removing and installing distributor /head lamp /horn**
4. **Inspect, test, repair or replace components, connectors, terminals, harnesses and wiring in car electrical /electronic system**
5. **Inspect, remove, replace A.C. compressor drive belt, pulley and tensioners**

FORMAT FOR REPAIR PLAN (Lab assignment)

1	**General Information**	**Date**		**LO No.**	
		Name of student			
		Roll No.			
		Name of car sub-assembly			
		Name of component(s)			
2	**Description of repair procedure and resources**	• **Description of detailed inspection/test/ repair procedure**			
		• **Sketch related to inspection/test / repair**			
		• **Measuring tools required**			
		• **Repair tools required**			
		• **Machines /devices / equipments required**			
		• **Consumables required**			
		• **Spare parts required**			
		• **Approximate time required for repairs**			
4	**Additional information (if required)**				
5.	**Signature of student**				

Assessment criteria (for each repair plan)* :-

1. Extent of appropriateness of required tools, machines, devices (05 marks)

2. Extent of appropriateness of required consumables ,spare parts and time (05marks)

***Note: - Give marks out of 10 for each repair plan and finally scale down the obtained sum of two into half and rounded to higher side whole number (if necessary).**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	1	5	3	

COURSE NAME	**Auto Maintenance Service & Repairs**
CO Description	Student will be able to maintain / repair given car electrical / electronic system
LO Description	Student will be able to perform given car electrical / electronic system related unique repair / maintenance activity

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract /Tut Hrs.	LRs Required	Remarks
1	Testing and repair /maintenance related specific activities for car starting system, ignition system, charging system, lights & wiring system and electronic system	Lab demonstration + Guided student practice	Teacher will explain and demonstrate the content activities to students, student will practice the content activities under guidance of teacher, teacher will identify their weaknesses and will provide necessary remedial and tutorials	04	03	• Book:- Automotive mechanics by W.H.Crouse and Anglin • Automotive electrical and electronics By P L Kohli Or its equivalent • Related Engine Manuals, Charts • Related tool, devices and equipment	Teacher will provide online available learning material like videos, diagrams, animations, photographs etc.

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory assignment	Student will be asked to perform given car electrical electronics related two specific activities in front of the teacher	05	Rating scale	Internal

INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

List of repair related activities to be learned by the student:-

1. **Perform tests for knowing battery condition**
2. **Perform tests for knowing starter motor condition**
3. **Perform leak test in car air conditioning system**
4. **Timing the distributor to the engine; adjusting initial timing for starting and idling; adjusting spark advance;**
5. **Perform to set and adjust ignition timing with the help of timing light**
6. **Perform head light aiming**

Assessment criteria* :-

1. Extent to which SOP has been followed (03 marks)
2. Extent to which student used appropriate tools (01marks)
3. Extent to which student used tools appropriately (01 marks)

***Note: - Give marks out of 5 for each activity and finally scale down the obtained sum of two activities to half and rounded to higher side whole number (if necessary).**

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 1/4

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	602	Course Name	Auto Business Management

Course Outcome 1	Student will be able to manage the vehicle maintenance and repair work	T-L Hrs	Marks
Learning Outcome 1	Student will be able to supervise the work for the given maintenance or repair related task work	12	15
Contents	Maintenance, types of maintenance, service, repair, difference between them Introduction to Management, functions of management, supervision, need for directions and instructions to subordinates, motivation and theories of motivation, Maslow's hierarchy of human needs, McClelland's Human Motivation Theory, role of supervisor \Foreman, qualities of supervisor, methods of supervision		
Method of Assessment	Theory exam		
Learning Outcome 2	Student will be able to plan, estimate and calculate actual cost of given vehicle repair work	08	10
Contents	Planning and its importance, planning for resources like tools, manpower, spare parts, time required, outsourcing, estimating the expenditures on repair, calculating the actual cost of repairs, major heads of estimation and costing like labor charge, consumables, utilities etc.		
Method of Assessment	Theory assignment		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 2/4

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	602	Course Name	Auto Business Management

Course Outcome 2	Student will be able to coordinate various vehicle repair workshop activities	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to allocate and schedule the daily work among the available man-power**	**10**	**10**
Contents	Need and importance work allocation and work scheduling, Gantt chart, importance of activity plan, elements of activity plan like duration, start/ finish date, responsible worker, resources required etc. preparation of activity plan, examples and cases.		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to coordinate the various activities of the vehicle service and repair shop**	**04**	**05**
Contents	Need and importance of coordination to control various activities, contingencies, work re-allocation, work re-scheduling, revising and updating the activity plan, cases and examples		
Method of Assessment	Theory assignment		
Learning Outcome 3	**Student will be able to keep basic records and accounts of the given repair shop**	**06**	**05**
Contents	Need and importance of record keeping, benefits of record keeping, records related to revenue /income /expenditures /profit /loss/ debts/taxes; records related to repair work/ servicing performed like job card, inspection reports, work sheets, work schedules, PDI record etc.		
Method of Assessment	Theory assignment		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 3/4

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	602	Course Name	Auto Business Management

Course Outcome 1	Student will be able to demonstrate his/her knowledge about dealership/service station/ repair shop	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain about the car dealership / service station / repair workshop regarding organization structure, staff structure, functions, roles and responsibilities**	08	15
Contents	Need and importance of showroom, post sale-services, Functions of dealership / service station / repair shop / garage and difference between them, organization structures and layouts for car dealership / service station / repair workshop, roles and responsibilities of different designations		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to plan an authorized service station /repair shop as self enterprise**	09	05
Contents	Entrepreneurship and self-employment, personality of entrepreneur , establishment of self service station/repair-shop, need of financing self enterprise, salient features of various schemes for commercial loans, planning self enterprise, BEP analysis, preparation of short project report for establishing self enterprise		
Method of Assessment	Theory Assignment		
Learning Outcome 3	**Student will be able to select a suitable vehicle according to unique requirements of the customer**	08	05
Contents	Different categories of cars, Important customer related specifications of cars, important customer requirements for cars, study of customer related specifications of popular models of cars, selection of suitable car according to given customer requirements, comparison of different models of cars within the same category of car		
Method of Assessment	Theory Assignment		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 4/4

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	602	Course Name	Auto Business Management

Course Outcome 1	Student will be able to manage stores of the automobile repair-shop / service centre	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain the layout and management of store for repair-shop / service centre**	10	15
Contents	Importance of stores, functions of automobile repair shop /service station stores, items to be kept in the stores, coding of items, two bin system, layout of the store, record of stores, procedure of receiving and issue of items in the store		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able explain different types of inventory management methods**	15	15
Contents	Inventory, its meaning and importance, types of inventory, examples, purpose of inventory control, various costs related to storage, popular methods of effective inventory management, ABC and XYZ analyses, safety stocks, reorder point, Wilson's model, economic order quantity, re-order point, simple numerical problems based on use of formula		
Method of Assessment	Theory exam		

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	1	1	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to manage the vehicle maintenance and repair work**
LO Description	**Student will be able to supervise the work for the given maintenance or repair related task work**

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, types of maintenance, service, repair, difference between them Introduction to Management, functions of management, supervision, need for directions and instructions to subordinates, motivation and theories of motivation, Maslow's hierarchy of human needs, McClelland's Human Motivation Theory, role of supervisor \Foreman, qualities of supervisor, methods of supervision	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	09	03	Books:- 1 Maintenance Engineering by Dr. G. K. Vijayaraghavan from Suchitra Publications2.Industrial Engg. & Management by O. P. Khanna Dhanpat Rai and Sons Delhi	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	One question related to the learned content will be asked in the university question paper	15	Question paper, Check list	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	1	2	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to manage the vehicle maintenance and repair work**
LO Description	**Student will be able to plan, estimate and calculate actual cost of given vehicle repair work**

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 its importance, planning for resources like tools, manpower, spare parts, time required, outsourcing, estimating the expenditures on repair, calculating the actual cost of repairs, major heads of estimation and costing like labor charge, consumables, utilities etc.	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	06	02	Books:- 1. Automotive service management by pearson (3rd edition)	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory assignment	One or more cases will be given to student in which they will plan, estimate and calculate actual cost of repair based on given case data	10	Assignment questions, Check list	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	2	1	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to coordinate various vehicle repair workshop activities**
LO Description	**Student will be able to allocate and schedule the daily work among the available man-power**

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 and importance work allocation and work scheduling, Gantt chart, importance of activity plan, elements of activity plan like duration, start/ finish date, responsible worker, resources required etc. preparation of activity plan, examples and cases.	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	07	03	Industrial Engg. And Management By Dr. O. P. Khanna Dhanpat Rai & Sons	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

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

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Format for activity plan:-

	Activity details	Duration	Start date	Finish date	Responsible worker	Resources required
1						
2						
3						

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	2	2	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to coordinate various vehicle repair workshop activities**
LO Description	**Student will be able to coordinate the various activities of the vehicle service and repair shop**

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 and importance of coordination to control various activities, contingencies, work re-allocation, work re-scheduling, revising and updating the activity plan, cases and examples	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	03	01	Books:- 1. PERT & CPM Principles & Applications By L.S. Shrinath, East-west Press	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory assignment	Assignment will be given to the student, in which student will be asked to reschedule/ revise/ update the given activity plan on basis of given contingencies	05	Assignment question, rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	2	3	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to coordinate various vehicle repair workshop activities**
LO Description	**Student will be able to keep basic records and accounts of the given repair shop**

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 and importance of record keeping, benefits of record keeping, records related to revenue /income /expenditures /profit /loss/ debts/taxes; records related to repair work/ servicing performed like job card, inspection reports, work sheets, work schedules, PDI record etc.	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	04	02	Books:- Mechanical Estimating and costing by T.R. Banga and S.C. Sharma, Khanna Pub. 2 Accounting for small business owners by Tycho Press	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory assignment	Assignments related to various types of record preparation for the given case data, will be given to assess learning of students	05	Assignment questions, rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	3	1	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to demonstrate his/her knowledge about dealership/service station/ repair shop**
LO Description	**Student will be able to explain about the car dealership / service station / repair workshop regarding organization structure, staff structure, functions, roles and responsibilities**

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 and importance of showroom, post sale-services, Functions of dealership / service station / repair shop / garage and difference between them, organization structures and layouts for car dealership / service station / repair workshop, roles and responsibilities of different designations	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	06	02	Any standard book on business organization and management, Internet based material related to contents	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Two questions will be asked related to learned contents	15	Exam question paper, rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	3	2	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to demonstrate his/her knowledge about dealership/service station/ repair shop**
LO Description	**Student will be able to plan an authorized service station /repair shop as self enterprise**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Entrepreneurship and self-employment, personality of entrepreneur , establishment of self service station/repair-shop, need of financing self enterprise, salient features of various schemes for commercial loans, planning self enterprise, BEP analysis, preparation of short project report for establishing self enterprise	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	07	02	Essentials of Entrepreneurship and small business management by N.M. Scarborough & J. R. Cornwall, Pearson (in India, sales by Meripustak)	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory assignment	Students will prepare short project reports on establishment of dealership / service station/ auto repair shop	05	Assignment questions, rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	3	3	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to demonstrate his/her knowledge about dealership/service station/ repair shop**
LO Description	**Student will be able to select a suitable vehicle according to unique requirements of the customer**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Different categories of cars, Important customer related specifications of cars, important customer requirements for cars, study of customer related specifications of popular models of cars, selection of suitable car according to given customer requirements, comparison of different models of cars within the same category of car	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	06	02	1. Book:- Principles of marketing by P. Kotler & Armstrong 17E Pearson 2. Standard internet based material related to content	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory assignment	Assignments will be given to compare different models of cars on given criteria or to conduct short survey of customer expectations about car or to prepare arguments for sales of a particular model of car to particular category of customer	05	Assignment questions, rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	4	1	

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to manage stores of the automobile repair-shop / service centre**
LO Description	**Student will be able to explain the layout and management of store for repair-shop / service centre**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Importance of stores, functions of automobile repair shop /service station stores, items to be kept in the stores, coding of items, two bin system, layout of the store, record of stores, procedure of receiving and issue of items in the store	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	07	03	Book:- Industrial Engineering and management by Dr. O.P. Khanna, Dhanpat Rai and Sons Delhi or its equivalent	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Two theory questions will be asked from the learned contents	15	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	2	4	2

COURSE NAME	**AUTO BUSINESS MANAGEMENT**
CO Description	**Student will be able to manage stores of the automobile repair-shop / service centre**
LO Description	**Student will be able explain different types of inventory management methods**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Inventory, its meaning and importance, types of inventory, examples, purpose of inventory control, various costs related to storage, popular methods of effective inventory management, ABC and XYZ analyses, safety stocks, reorder point, Wilson's model, economic order quantity, re-order point, simple numerical problems based on use of formula	Traditional lecture method	Teacher will teach the contents with help of examples and cases, teacher will provide cases for discussion, teacher will assess weaknesses of students and will improve their learning through tutorials/ remedial classes	11	04	Book:- Industrial Engineering and management by Dr. O.P. Khanna, Dhanpat Rai and Sons Delhi or its equivalent	Teacher will also provide internet based learning material such as websites, videos and links

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Two theory questions will be asked from the learned contents	15	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 1/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	603	Course Name	Automotive Legislation

Course Outcome 1	Student will be able to explain the salient features of motor vehicle act	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain the significance, history and amendments regarding Motor Vehicle Act**	**04**	**05**
Contents	Introduction, need and importance of the course, difference between law, act and rule, introduction to Indian Motor Vehicle Act 1988, its significance and importance, layout and organization of the act, time to time amendments done in it		
Method of Assessment	Paper pen test		
Learning Outcome 2	**Student will be able to explain the salient features of Motor Vehicle Act regarding licensing of drivers and registration of road vehicles**	**08**	**10**
Contents	Necessity of driving license, age limit, learner license, format and contents of license, driving training schools, renewal of the license, revocation of driving license, necessity of vehicle registration, process of registration, temporary registration, renewal, modification, suspension and cancellation of registration, certificate of fitness for transport vehicles		
Method of Assessment	Theory exam		
Learning Outcome 3	**Student will be able to explain the salient features of motor vehicle act regarding control of transport vehicles and control of traffic**	**08**	**10**
Contents	Meaning, need and importance of permits, transport authorities, procedure for obtaining permits of various types of vehicles, types of permits; duration and renewal of permits; transfer, suspension and cancellation of permits, parking places and halting stations, speed limit, stationary vehicles, safety measures for drivers / passengers, duty of driver in case of accident.		
Method of Assessment	Theory exam		
Learning Outcome 4	**Student will be able to explain the salient features of Motor Vehicle Act regarding insurance of vehicle against third party and offences, penalties and procedures**	**10**	**15**
Contents	Meaning, need and importance of insurance, first, second and third parties, necessity of insurance against third party, insurance policy, certificate of insurance, transfer of certificate of insurance, compensation in case of hit and run motor accident, compensation formula, various offences and punishments related to unlawful driving, breath tests		
Method of Assessment	Theory exam		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 2/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	603	Course Name	Automotive Legislation

Course Outcome 2	Student will be able to explain the procedure of obtaining driving license, vehicle registration and vehicle permit	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain the procedure and formats for obtaining driving license**	**05**	**05**
Contents	Various types of licenses, documents required for obtaining license, procedure of obtaining renewal of license, various formats for obtaining/ renewal of licenses		
Method of Assessment	Assignment		
Learning Outcome 2	**Student will be able to explain the procedure and formats for getting vehicle registered**	**05**	**05**
Contents	Requirements for obtaining vehicle registration, content of vehicle registration certificate, coding of registration number, number plate format and types, documents required for vehicle registration/ renewal of registration/ transfer of vehicle registration, procedure of obtaining registration, various formats for obtaining registration/ renewal of registration/ transfer of registration		
Method of Assessment	Assignment		
Learning Outcome 3	**Student will be able to explain the procedure and formats for getting vehicle permit**	**05**	**05**
Contents	Requirements for obtaining vehicle permit, content of vehicle permit certificate, documents required for vehicle permit, renewal of permit, procedure of obtaining permits, various formats for obtaining permits		
Method of Assessment	Assignment		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 3/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	603	Course Name	Automotive Legislation

Course Outcome 1	Student will be able to explain the various types of vehicle insurances and their salient features	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain various types of vehicle insurances and their salient features**	**13**	**10**
Contents	Various types of vehicle insurance policies and their salient features, common add-ons and riders on standard insurance policy, depreciation rates of components according to age of vehicle, components not covered under insurance claim, insurance at zero depreciation, conditions under which insurance can-not be claimed		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to explain the assessment of damage and claim preparation**	**07**	**05**
Contents	Inspection of damaged vehicle, investigation of causes of accident, assessment of extent of damage to different components, preparing evidences of causes of accident / extent of damage to different components, preparation of damage assessment report, preparation of claim in prescribed format		
Method of Assessment	Assignment		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 4/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	603	Course Name	Automotive Legislation

Course Outcome 1	Student will be able to explain the road traffic regulation	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain the different traffic rules signals and signs**	**04**	**05**
Contents	Motor vehicle rules and standards regarding traffic signs, traffic signals and signaling devices		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to explain the duties of the traffic police**	**04**	**05**
Contents	Need of traffic control on roads, role of traffic police, duties and powers of traffic police		
Method of Assessment	Theory exam		
Learning Outcome 3	**Student will be able to explain the roles of various agencies in effective administration of MVA and MVR**	**07**	**10**
Contents	Role of Ministry of surface transport and highways (GOI), role of state transport departments, role of regional transport offices (State governments), role of Vehicle research and development establishment (VRDE), role of Automotive Research Association of India (ARAI), Insurance Regularity and Development Authority of India (IRDA)		
Method of Assessment	Theory exam		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 5/5

Branch	AUTOMOBILE ENGINEERING	Semester	Sixth

Course Code	603	Course Name	Automotive Legislation

Course Outcome 1	Student will be able to explain the pollution control norms, related tests procedures and formats	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to explain the vehicle pollution control norms applicable in India**	05	05
Contents	Brief history of pollution control norms in India, salient features of Bharat Stage IV, V and VI, comparison of Bharat Stage IV, V and VI norms		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to explain the pollution control test procedures and related formats for controlling pollution from road vehicles**	05	05
Contents	Necessity of driving license, age limit, learner license, format and contents of license, driving training schools, renewal of the license, revocation of driving license, necessity of vehicle registration, process of registration, temporary registration, renewal, modification, suspension and cancellation of registration, certificate of fitness for transport vehicles		
Method of Assessment	Paper pen test		

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	1	1	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the salient features of motor vehicle act**
LO Description	**Student will be able to explain the significance, history and amendments regarding Motor Vehicle Act**

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, need and importance of the course, difference between law, act and rule, introduction to Indian Motor Vehicle Act 1988, its significance and importance, layout and organization of the act, time to time amendments done in it	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	01	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Paper pen test	A test will be conducted to assess the learnt knowledge of the students	5	Test questions and rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	1	2	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the salient features of motor vehicle act**
LO Description	**Student will be able to explain the salient features of Motor Vehicle Act regarding licensing of drivers and registration of road vehicles**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Necessity of driving license, age limit, learner license, format and contents of license, driving training schools, renewal of the license, revocation of driving license, necessity of vehicle registration, process of registration, temporary registration, renewal, modification, suspension and cancellation of registration, certificate of fitness for transport vehicles	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	06	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	1	3	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the salient features of motor vehicle act**
LO Description	**Student will be able to explain the salient features of motor vehicle act regarding control of transport vehicles and control of traffic**

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, need and importance of permits, transport authorities, procedure for obtaining permits of various types of vehicles, types of permits; duration and renewal of permits; transfer, suspension and cancellation of permits, parking places and halting stations, speed limit, stationary vehicles, safety measures for drivers / passengers, duty of driver in case of accident.	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	06	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	1	4	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the salient features of motor vehicle act**
LO Description	**Student will be able to explain the salient features of Motor Vehicle Act regarding insurance of vehicle against third party and offences, penalties and procedures**

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, need and importance of insurance, first, second and third parties, necessity of insurance against third party, insurance policy, certificate of insurance, transfer of certificate of insurance, compensation in case of hit and run motor accident, compensation formula, various offences and punishments related to unlawful driving, breath tests	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	07	03	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	15	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	2	1	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the procedure of obtaining driving license, vehicle registration and vehicle permit**
LO Description	**Student will be able to explain the procedure and formats for obtaining driving license**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Various types of licenses, documents required for obtaining license, procedure of obtaining renewal of license, various formats for obtaining/ renewal of licenses	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Assignment	An assignment will be given to students to assess their knowledge	5	Assignment question(s and rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	2	2	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the procedure of obtaining driving license, vehicle registration and vehicle permit**
LO Description	**Student will be able to explain the procedure and formats for getting vehicle registered**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Requirements for obtaining vehicle registration, content of vehicle registration certificate, coding of registration number, number plate format and types, documents required for vehicle registration/ renewal of registration/ transfer of vehicle registration, procedure of obtaining registration, various formats for obtaining registration/ renewal of registration/ transfer of registration	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Assignment	An assignment will be given to students to assess their knowledge	5	Assignment question(s) and rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	2	3	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the procedure of obtaining driving license, vehicle registration and vehicle permit**
LO Description	**Student will be able to explain the procedure and formats for getting vehicle permit**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Requirements for obtaining vehicle permit, content of vehicle permit certificate, documents required for vehicle permit, renewal of permit, procedure of obtaining permits, various formats for obtaining permits	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Assignment	An assignment will be given to students to assess their knowledge	5	Assignment question(s) and rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	3	1	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the various types of vehicle insurances and their salient features**
LO Description	**Student will be able to explain various types of vehicle insurances and their salient features**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Various types of vehicle insurance policies and their salient features, common add-ons and riders on standard insurance policy, depreciation rates of components according to age of vehicle, components not covered under insurance claim, insurance at zero depreciation, conditions under which insurance can-not be claimed	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	09	04	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	3	2	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the various types of vehicle insurances and their salient features**
LO Description	**Student will be able to explain the assessment of damage and claim preparation**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Inspection of damaged vehicle, investigation of causes of accident, assessment of extent of damage to different components, preparing evidences of causes of accident / extent of damage to different components, preparation of damage assessment report, preparation of claim in prescribed format	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	04	03	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Assignment	An assignment will be given to students to assess their knowledge	5	Assignment question(s) and rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	4	1	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the road traffic regulation**
LO Description	**Student will be able to explain the different traffic rules signals and signs**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Motor vehicle rules and standards regarding traffic signs, traffic signals and signaling devices	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	01	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	5	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	4	2	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the road traffic regulation**
LO Description	**Student will be able to explain the duties of the traffic police**

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 traffic control on roads, role of traffic police, duties and powers of traffic police	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	01	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	5	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	4	3	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the road traffic regulation**
LO Description	**Student will be able to explain the roles of various agencies in effective administration of MVA and MVR**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Role of Ministry of surface transport and highways (GOI), role of state transport departments, role of regional transport offices (State governments), role of Vehicle research and development establishment (VRDE), role of Automotive Research Association of India (ARAI), Insurance Regularity and Development Authority of India (IRDA)	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	05	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	5	1	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the pollution control norms, related tests procedures and formats**
LO Description	**Student will be able to explain the vehicle pollution control norms applicable in India**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Brief history of pollution control norms in India, salient features of Bharat Stage IV, V and VI, comparison of Bharat Stage IV, V and VI norms	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	04	01	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

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 university question paper.	5	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	6	0	3	5	2	

COURSE NAME	**Automotive Legislation**
CO Description	**Student will be able to explain the pollution control norms, related tests procedures and formats**
LO Description	**Student will be able to explain the pollution control test procedures and related formats for controlling pollution from road vehicles**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Vehicle exhaust pollution measurement test procedures for different types of road vehicles, required test equipments and tools, major specifications of test equipments, conduction of test on two/four wheelers.	Traditional lecture method	Teacher will explain different concepts related to contents through examples and cases.	03	02	MVA 1988 MVA 2019 MVA 2021 Book: Transport Management – RB Gupta	Teacher will suggest more charts, tables and video links, LRs to assist in learning

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Paper pen test	A test will be conducted to assess the learnt knowledge of the students	5	Test questions and rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

INTRODUCTION TO PROJECT WORK

Project work is a very important course in all branches of diploma programmes. It offers following opportunities to students of final semester:-

1. To apply the knowledge and skills learnt in previous semesters, to solve real life industrial / engineering / professional problems.
2. To modify/ improve the existing engineering / professional systems
3. To develop systems / components / methods / processes / resources to cater the needs of the nearby small scale / medium industry
4. To develop innovative solutions for prevailing engineering / professional issues / problems / concerns
5. To learn to solve real life engineering / professional problems which often have many aspects to be considered and addressed
6. To learn **skills and abilities** which are otherwise not possible either in classroom or in structured environment of laboratory such as:-
   - **Skill to work in groups or teams,**
   - **Skill to face real life professional problems and to create real life solutions for them,**

- **Skill to take professional decisions under real life constraints and circumstances,**
- **Skill to learn in self directed way to pursue the specific professional projects (Self Directed Learning)**
- **Skill to learn from real life self experiences (lifelong learning)**
- **Skill to manage the real life engineering / professional projects**
- **Skill to plan and organize the self / group professional work**
- **skills to apply the engineering management principles in real life professional projects**
- **Skill to defend / justify self real life engineering / professional work in front of significant others**
- **Skill to complete the professional tasks / work keeping in view societal, legal and environmental considerations**
- **Skill to collect relevant data in real life situations**
- **Skill to relate engineering / professional knowledge gained in various semesters with real life engineering / professional problems**
- **Skill to estimate the duration and costs in real life engineering / professional work**
- **Skill to assess the theoretical feasibility, financial feasibility and time feasibility of real life engineering / professional tasks**

- **Skill to assess the suitability of available human resources for the given engineering / professional task considering their ability, knowledge, experience, interest etc.**
- **Skill to prepare component specifications, engineering drawings / product specifications / work plans for solving real life engineering / professional problems**
- **Skill to conduct market surveys for purchasing of project related components and for hiring specific engineering / professional expert services etc.**

Many of the above skills which are learnt during the project work are also necessary to fulfill the requirements of NBA for attainment of many Programme Outcomes (POs), which are otherwise not possible to be achieved. These POs are:-

- **Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.**
- **Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.**
- **Apply appropriate technology in context of society, sustainability, environment and ethical practices.**

- **Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.**
- **Ability to analyze individual needs and engage in updating in the context of technological changes.**

NBA has put special emphasis on the project work done by students. It has assigned significant marks (35 marks) exclusively for **student's project work** under following heads:-

  - **Method of identification of topics for the project work,**
  - **Methodologies adopted to complete the projects,**
  - **Quality of the projects and report writing,**
  - **Process adopted to assess individual and team performances in the project work,**
  - **Process of monitoring and evaluation of the student's project work,**
  - **Quality of the prototypes made in project work,**
  - **Recognition and awards received by the students' projects in state/ national level etc.**

Therefore, the aim of introducing the course of ***PROJECT WORK*** *is to ensure learning of above mentioned skills and abilities in the students and also to make efforts to earn the maximum of marks allotted by NBA for assessment of practices followed in the student's project work.*

With an objective to ensure the learning of above skills and abilities as well as to earn maximum marks in NBA assessment, the university has developed the following course structure (COs & LOs) of this course.

The Course on Project Work consists of five phases:-

	Description of phases	COs	LOs	Learn Hrs.	Marks
1	**Literature / industry's need survey and finalization of topic / title**	01	02	20Hrs	25
2	**Detailed planning of the project work**				
3	**Implementing the detailed project plan**	01	02	70Hrs	35
4	**Managing the project activities**				
5	**Reporting of the project work output /outcome / prototype**	01	03	15Hrs	40
	Total	**03**	**07**	**105Hrs**	**100**

The details of COs and LOs are as follows:-

CO1:- The student will be able to prepare a detailed project plan for solving any real life related engineering / technical / professional / industrial problem

LO1:- The student / group will be able to present / justify / defend its project proposal (10 marks)

LO2:- The student group will be able to prepare a detailed activity based plan & activity schedule chart to complete the project (15 marks)

CO2:- The student will be able to implement the project plan and manage the project

LO1:- The student / group will be able to revise / update / re-schedule / re-allocate the activities / resources in the project plan according to their day to day local contingencies (20 marks)

LO2:- The student / group will be able to prepare a daily logbook of project activities performed (15 marks)

CO3:- The student will be able to present the completed project work

LO1:- The student / group will be able to present the prototype / output /outcome of the project work and to defend/ justify methodology implemented as well as the quality of prototype / output / outcome of the project work (15 marks)

LO2:- The student / group will be able to prepare the project report in the prescribed format (15 marks)

LO3:- The student will be able to prepare a reflective learning portfolio about the informal self-learning while working for the project (10 marks)

General Guidelines for Project Work

- The project topics should be related to concerned branch of engineering / profession, but, should not be the exact content of the curriculum taught in the discipline.
- Student's project topics should be preferably 'real life' topics. It means the project topics should have substantial element of uncertainty, complexity and multi-disciplinary-ness which can be coped up by the students. These elements offer opportunities to students to apply engineering/ professional knowledge in real life settings, solve real life problems and to take real life decisions. As a project guide, concerned teacher should ensure these by suitably altering / framing / reframing the statement of topic / title.
- The project topics should be such that students can get opportunity to refer IS codes, Manuals, Handbooks, norms and standards, opportunity to conduct standard tests, and opportunity to operate modern laboratory equipments following SOPs.
- For student's interest, active participation and ownership in the project work, their self-motivation is necessary. Therefore, students should be actively involved in finalizing the topic of project.
- Students should be asked to conduct a brief review of literature for problems and issues in their engineering / professional areas of interest, where they think they can contribute effectively. The project guide should facilitate them in this regard, through his/her expertise and experience.

Every student group should be asked to propose at least three topics of their interest.

- The topics proposed by student project groups should be assessed by the facilitator-teacher on following three criteria:-
    - **The work on the topic should be theoretically and practically feasible**
    - **The project work on the topic should be completed within approx. two and half months**
    - **Availability of required resources should be certain. Cost of project work should also be bearable.**
- Normally, students' project works should be carried out in small groups (3 to 5 students).
- All faculty members of department should be engaged as project guides. Every faculty member should be project guide of at least one student project group.

- Normally, project guides should be assigned to the students through lottery system and students under each faculty should be asked to form their small groups.

Role of a project guide

- The project guide should review the topics of interests of student project groups for enough scope in their project work to inculcate skills and abilities aimed to be developed in students through their project work. Accordingly, he/she should appropriately alter or revise the topics proposed by the student groups. This can also be ensured by reframing, altering or recomposing the statement of the title of the project work and mentioning of specific concepts, specific procedures, specific conditions, specific tests and other specifications in the title of project work.
- The project guide should work as an expert facilitator for students. It means he/she should not be a spoon feeder to the student project group. He/she should facilitate the students through his/her expert knowledge, experience and information, advices, suggestions, clues, hints as and when required by the students' project group.
- As a facilitator, instead of providing readymade solutions to project related problems, he/she should prefer to encourage and facilitate students to face problems, search possible solutions and to choose most appropriate solution. Although, at times of crisis, when he/she observes that students are unable to deal with the complexity of the situation, he/she should also work as savvier.
- Normally, ee/she should not take project related decisions on behalf of students. Rather, he/she should encourage and support students to

take decisions. In exceptional situations, when he/she observes that students are unable to control the project, he /she may take decision or correct decisions taken by them, or direct them so that project could be sailed smoothly.

- The project guide should regularly arrange project progress review meetings with the student groups. He/ she should regularly check their project work logbook. Apart from facilitating them in their project work, he/she should also observe the progress of their variety of project related learning, which is the main objective of the student project work.
- The project guide should appropriately treat the slow learners.

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	1	1	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to prepare a detailed project plan for solving any real life related engineering / technical / professional / industrial problem**
LO Description	**The student / group will be able to present / justify / defend its project proposal**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Preliminary survey of literature/industry for problems for project work, evaluation of the potential project topics, finalizing project topic/title, preparation of project proposal presentation/defending project proposal	Guided learning activity	Project guide will guide student group for literature review, provide industry's problems which can be worked upon as project, guide the groups to evaluate the topics and finalize project topic, guide the group for preparing project proposal, guide group to present / defend their project proposal.	-	08	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	Student group assignment+ student group activity	Every student group will submit project proposal in prescribed format. A departmental seminar will be organized in which different students' groups will present their proposal in front of students of second and third year and faculty members and will justify/ defend their project proposal.	10	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. The project topics should be related to concerned branch of engineering / profession, but, should not be the exact content of the curriculum taught in the discipline.

2. For student's interest, active participation and ownership in the project work, their self-motivation is necessary. Therefore, students should be actively involved in finalizing the topic of project.
3. Students should be asked to conduct a brief review of literature for problems and issues in their engineering/ industrial / professional areas of interest, where they think they can contribute effectively. Guide should facilitate them in this regard, through his/her expertise and experience. Every student group should be asked to propose at least three topics of their interest.
4. The topics proposed by student project groups should be assessed by the guide on following three criteria:-
    a. **The project work on the topic should be theoretically and practically feasible**
    b. **The project work on the topic should be completed within approx. three months**
    c. **The required resources should be available to students. Cost associated with the project work should also be bearable.**
5. Project topic / title should be finalized by student groups after due consultation with their project guides.
6. Student's project topics should be preferably 'real life' topics. It means the project topics should have substantial element of uncertainty, complexity and multi-disciplinary-ness which can be handled by the students. These elements offer opportunities to students to apply engineering knowledge in real life settings, in solving real life problems and in taking real life decisions. Project guide should ensure these by suitably altering / framing / reframing the statement of topic / title.
7. The project topics should be preferably such that students can get opportunity to refer, study and apply IS codes, Manuals, Handbooks, norms and standards; get opportunity to conduct standard tests; get opportunity to operate modern laboratory equipments following SOPs.

8. PROJECT PROPOSAL FORMAT:-

1. **Project title:-**
2. **Relevance, need and importance of the project:-**
3. **Project Output / Outcome:-**
4. **Expected time to complete the project:-**
5. **Start date & finish date:-**
6. **Methodology:-**

7. **Major resources required:-**

8. **Estimated cost of project:-**

9. **Potential problems and challenges associated with the project**

10. **Strategy to deal with the potential problems and challenges**

9. Assessment criteria:-

(A) Assessment of project proposal:-

a. Extent of relevance, need of the project and benefits of the project (2 marks)

b. Extent of feasibility of the project work in principle (2 marks)

c. Extent of feasibility of the project work in semester duration (2 marks)

d. Extent of feasibility of project in terms of project cost & availability of resources (2marks)

(B) Assessment of project proposal; quality of presentation / justification/ defense (2 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	1	2	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to prepare a detailed project plan for solving any real life related engineering / technical / professional / industrial problem**
LO Description	**The student group will be able to prepare a detailed activity based plan & activity schedule chart to complete the project**

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 detailed project plan, creation of activities, logically sequencing of activities, assigning responsibilities of activities, assessing resource requirements of every activity, activity scheduling, activity schedule chart and its application	Guided learning activity	Project guide will guide student group for breaking the project into activities, will guide them to prepare activity specifications, will guide them to arranging activities in logical sequence, will guide them to schedule the activities, will guide them to prepare activity schedule chart	-	12	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	Student group assignment	Every student group will submit its detailed activity based plan and activity schedule chart for their project work. These will be assessed through following criteria	10+ 05	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

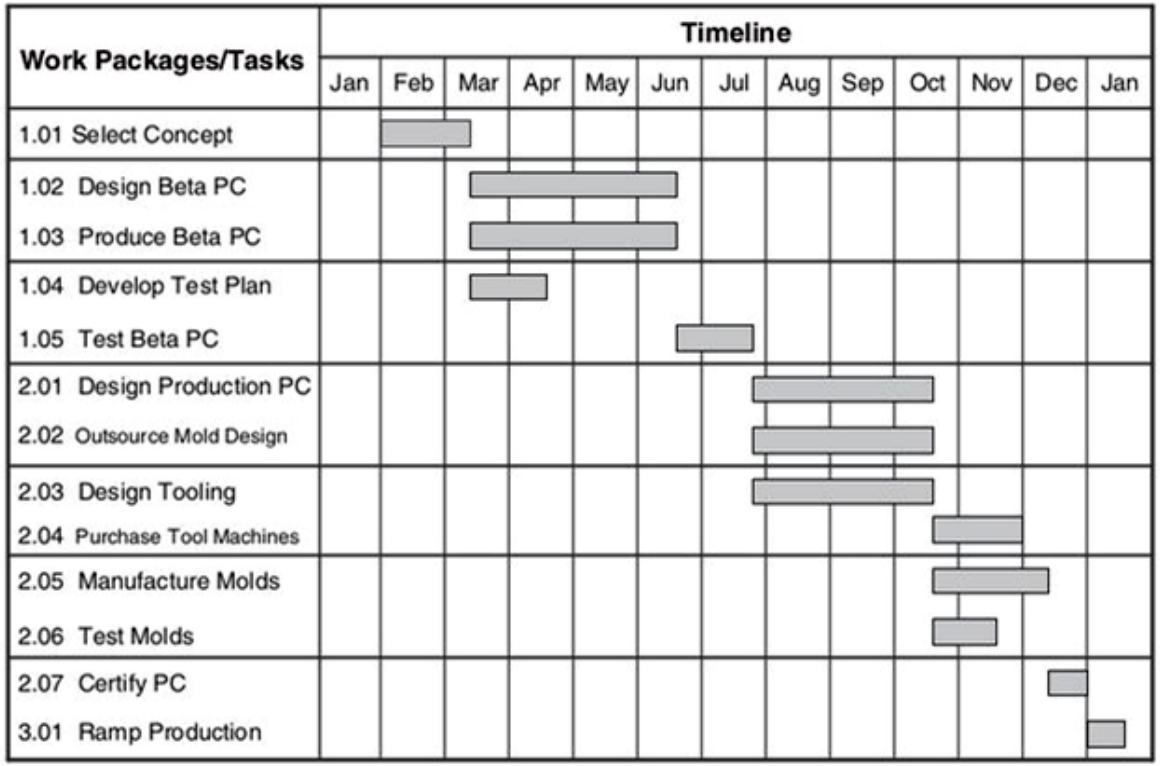
1. **For systematic, efficient and effective project work, project work should be planned before starting working on the project.**
2. **In project planning, project work is broken into different project activities. Activity specifications are prepared. Then, different activities are logically**

sequence, activity numbers are assigned to activities and their start date as well as finish dates are decided.

3. **Activity specifications are the details prepared about the activity. The description of specification elements is as below:-**
    a. **Activity description**
    b. **Activity duration (estimated)**
    c. **Name of group member responsible for the activity**
    d. **Pre-requisite information or prior knowledge required to carry out of the activity**
    e. **List of resources required to complete the activity**
    f. **Estimated expenditure on the activity**
4. **FORMAT FOR DETAILED PROJECT PLAN**

S. No.	Activity No.	Activity description	Activity Duration	Start date	Finish date	Responsible member	Pre-requisite information or knowledge	Resources required	Estimated expenditure

5. **A pictorial presentation of the scheduling of the activities is also prepared. It is also called Gantt chart. It is useful to visualize how the activities will proceed in relation to each other. In the chart, scale on X-axis represents time line which may be hours or days or dates. Y axis represents sequential list of the activities. Activity duration is marked by drawing rectangular horizontal bars of different lengths.**
6. An example of activity schedule chart:-



7. Assessment criteria:-

a. Assessment of submitted detailed project plan (10 marks)

i. Extent of appropriateness of activity descriptions (3 marks)

ii. Extent of appropriateness of activity sequence/ activity durations (3 marks)

iii. Extent of Appropriateness of estimation of required resources / prior information / knowledge (3 marks)

iv. Extent of provisions for contingencies ie delays/ uncertainties /waiting time etc. (1mark)

b. Assessment of submitted activity schedule chart (5marks)

i. Extent of correctness of the chart according to detailed project plan (3marks)

ii. Extent of chart quality in the activity schedule chart (2marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	2	1	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to implement the project plan and manage the project**
LO Description	**The student / group will be able to revise / update / re-schedule / re-allocate the activities / resources in the project plan according to their day to day local contingencies**

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Implementation of project plan, conducting project activities, Need to update the plan, deviations from plan, reasons for deviations, daily contingencies, assessing, revising/updating/re-scheduling/re-allocation activities / resources, revising the project schedule diagram	Guided learning activity	Project guide will guide student group to implement its project plan, guide them to assess, review, revise, update, reschedule the plan/activities, reallocating resources to different activities , guide the group to revise the project schedule diagram	-	60	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	Student group assignment	Every student group will submit time to time updated / revised project plans and project schedule diagrams along with list of details of revisions made and corresponding reasons/justifications to revise the project plan / project schedule diagrams.	20	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Project plans are prepared by prior estimations about different project activities. Quality of project plan depends on the accuracy of estimation. During real life implementation of project plans, student project groups face contingencies and project does not necessarily proceed exactly

according to plan. There may be contingencies like delays in start / finish of activities, non-availability of resources, delays in availability of resources, availability of better resources etc.

2. Student project group should be able to time to time (weekly) review the plan in the light of circumstances and contingencies, and it should be able to revise the project plan

3. Project guide should guide them in their periodic review of the project plan. Students should prepare the lists of changes to be made in the plan along with reasons or justifications for such changes. According, plan should be revised and in future revised plan should be implemented.

4. **Suggested format for details of revision**:-

S. No.	Date	Revised Plan No.	Description of revisions made	Description of reason / justification
1				
2				
3				
4				

5. Guide should assess extent of improvement done in the plan by the student group considering time to time arising different contingencies.

6. Assessment criteria:-

a. Extent of improvement done related to activities (5 marks)

b. Extent of improvement done related to in charge-ship of activities (5marks)

c. Extent of improvement done related to resource allocations to different activities (5 marks)

d. Extent of improvement done in other misc. ways (5 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	2	2	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to implement the project plan and manage the project work**
LO Description	**The student / group will be able to prepare a daily logbook of project activities performed**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Project log book, its need and importance in project work, contents of the log book, filling in the log book, use of log book in retrieving project related useful information from log book	Guided learning activity	Project Guide will teach the need and benefits of project log book, will guide the students to prepare and regularly fill in the project log book along with project work, will time to time inspect the project logbook and provide feedback to improve the quality of entries	-	10	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	Student group assignment	At the end of their project work, every project group will submit their completed project work log book to the project guide. The project guides will assess the Log book on basis of assessment criteria	15	Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. A project work Logbook is a record of important events in project management. It is the written record showing all the work from start to finish. It provides evidence of work. It is important to track actions taken, changes made, decisions taken, problems and issues faced while managing a project. All required information is recorded in a logical manner.

2. It is maintained and filled by the project group members.
3. The log book should be filled in at least daily
4. Project work logbook may be maintained either in hard copy or in soft copy.
5. Project guide teacher should guide the students to fill the entries in the log book. He/she should time to time inspect group's project work log book.
6. Following is the suggested format for the log book page:-

PROJECT WORK LOG BOOK		**COLLEGE**				**YEAR**	
DEPARTMENT		**PROJECT GROUP NO.**		**DATE**		**SHEET NO.**	
PROJECT TITLE							
ACTIVITIES FINISHED	*DESCRIPTION*						
PROGRESS IN ONGOING ACTIVITIES	*DESCRIPTION*						
NEW ACTIVITIES STARTED	*DESCRIPTION*						
DELAYS OCCOURED AND REASONS FOR DELAYS	*DESCRIPTION*						
PROBLEMS / ISSUES FACED AND SOLVED	*DESCRIPTION*						
UNSOLVED PROBLEMS	*DESCRIPTION*						
DECISIONS TAKEN	*DESCRIPTION*						
Signature of students	**SIGN-1**				**SIGN-2**		

7. Assessment criteria:-

a. **Extent of regularity of maintaining the log book (5marks)**

b. **Extent of number of entries made in the logbook (5 marks)**

c. **Extent of quality of entries made in the logbook (5 marks)**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	3	1	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to present the completed project work**
LO Description	**The student / group will be able to present the prototype / output /outcome of the project work and to defend/ justify methodology implemented as well as the quality of prototype / output / outcome of the project work**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Importance of project work presentation, preparation for presentation, defending / justifying the presentation, practice and rehearsal	Guided learning activity	Project guides will guide respective student project groups in preparation of power point / physical presentation, project guides will guide the groups to prepare for defending/ justifying the methodology adopted and quality of the project work prototype/ output/ outcome, group practice and rehearsal	-	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	Student group presentation	The department will arrange a seminar. All second year and final year students, project guides and external examiner will be present in the seminar, student group will present the prototype/output/outcome of its project work through power point presentation as well as through physical presentation and there will be question answer session after the presentation	15	Rating Scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Assessment criteria:-

a. Extent of completion of the project work (2 marks)

b. Quality of project prototype/ output/ outcome (5marks)

c. Extent to which the student (group member) appropriately answered the questions of external examiner (8 marks)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	3	2	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to present the completed project work**
LO Description	**The student / group will be able to prepare the project report in the prescribed format**

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Importance of project report, format for project report, report preparation and editing, proof reading	Guided learning activity	Project guides will guide respective studen project groups in preparation/editing/proof-reading of project work report, the project guides wil assess the final report and will provide feedback for improvements in the report	-	08	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	Student group assignment	The department will submit the project reports of each project group to the external examiner prior to the project presentation seminar. The external examination will study these reports. He/she will assess the worth of the reports on basis of set criteria and will award marks	15	Rating Scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Project reports communicate information which has been compiled as a result of project work and related issues. Good project reports are documents that are accurate, objective and complete.
2. These should also be well-written, clearly structured and expressed in a way that holds the reader's attention and meets their expectations. The quality

and worth of the project work are also judged by the quality of the written report i.e. its clarity, organization and content.

3. The project report also helps external examiner to have a detailed study of the project work and to frame main questions for oral examination during presentation.
4. The project report should be made in hard copies. But, also soft copies can be made additionally, if necessary.
5. The project report should be made in many copies. One copy for department, one copy for library and one copy for each project group member.
6. **SUGGESTED FORMAT FOR PROJECT REPORT**

    1. Project title
    2. Students' group details
    3. Need & justification
    4. Expected output / outcome of the project
    5. Literature survey
    6. Detailed description of methodology adopted
    7. Description of resources required
    8. Detailed project activity plan
    9. Project activity schedule chart
    10. Modified / updated / rescheduled plan
    11. Modified / updated / rescheduled charts
    12. Major problems faced and their solutions
    13. Major decisions taken
    14. Description of prototype**/** Output/ outcome of the project
    15. Conclusion
    16. Recommendations
    17. Evidences and references

7. Other suggested guidelines for project report

a. Project reports should be typed neatly in New Times Roman letters on both sides of the paper with 1.5 line spacing on a A4 size paper (210 x 297 mm). The margins should be: Left - 1.5", Right - 1", Top and Bottom - 0.75".

b. Before taking the final printout, the approval of the concerned guide(s) is mandatory and suggested corrections, if any, must be incorporated.

c. Every copy of the report must contain

- Inner title page (White)
- Outer title page with a plastic cover
- Certificate in the format enclosed.

d. Main body of the report should be divided appropriately into sections and subsections. The sections and subsections may be numbered in the decimal form.

e. Section/subsection numbers along with their headings must be left justified with section number and its heading in font size 16 and subsection and its heading in font size 14. The body or the text of the report should have font size 12. The figures and tables must be numbered chapter wise.

f. The references should be numbered serially in the order of their occurrence in the text and their numbers should be indicated within square brackets for e.g. [3].

8. Suggested format for CANDIDATES' DECLARATION

I/we, ---------- students of Diploma in---------- Department ----------

of ---------- hereby declare that I/we own full responsibility for the information, results and conclusions provided in this project work titled "---------- ---------- "submitted to RGPV (Diploma Wing) for the award of Diploma in -- ----------.To the best of my/our knowledge, this project work has not been submitted in part or full elsewhere in any other institution/organization for the award of any

certificate/diploma/degree. I/we have completely taken care in acknowledging the contribution of others in this academic work. I/we further declare that in case of any violation of intellectual property rights and particulars declared, found at any stage, I, as the candidate will be solely responsible for the same.

Date		Roll Number	Name	Signature
	1			
Place	**2**			
	3			
	4			

7. Suggested format for CERTIFICATE:-

Certified that this project report entitled ---------- ----------”which is being submitted by Mr./Ms. ……., Roll. No……, a bonafide student of ……in partial fulfillment for the award of Diploma in Civil Engineering during the year …….. is record of students’ own work carried out under my/our guidance. It is certified that all corrections/suggestions have been incorporated in the Report and one copy of it being deposited in the polytechnic library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said diploma. It is further understood that by this certificate the undersigned do not endorse or approve any statement made, opinion expressed or conclusion drawn there in but approve the project only for the purpose for which it is submitted.

Guide Name and signature

External Examiners Name and signature

Head of Department
Dept. of ----------

8. Assessment criteria:-

1. **Quality of content of report (5marks)**
2. **Quality of structure and organization of report (3marks)**
3. **Quality of language used in report (2marks)**
4. **Number and quality of evidences (5 marks)**

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No.
					6	0	4	3	3	4

COURSE NAME	**Project Work**
CO Description	**The student will be able to present the completed project work**
LO Description	**The student will be able to prepare a reflective learning portfolio about the informal self-experiential-learning while working for the project**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Importance of lifelong learning, experiential self-learning, reflections on self-experiences, mechanism of learning from experiences through reflective thinking, reflective learning portfolio and its use in learning from self-experiences	Guided learning activity	Project guides will encourage the students to recall their project related experiences and reflect on those experiences, he /she will provide them reflective learning portfolio format to be filled be each student individually	-	03	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	Individual student assignment	The internal examiner will produce the collected filled reflective learning portfolio formats to the external examiner. External examiner will assess the experiential learning of students through assessing the individual responses to the portfolio questions	10	Rating Scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Lifelong learning ability, which is a higher order learning ability is now realized as an important skill for professional students so that they can continue their knowledge gradation in future and can create new knowledge from their variety of future professional

experiences.

2. Ability to informally self-learn from self professional experiences is core of lifelong learning ability.
3. Students' project work offers them an opportunity to undergo a variety of professional like experiences. They can learn how to learn from these experiences.
4. We humans do not automatically learn from our experiences. But, when we think and reflect on our experiences, when we question the unexpected results, abnormal happenings, unusual findings, mistakes, errors, delays, disagreements, differences, conflicts etc., we seek reason for them and in this way we learn from them. This process is called reflective learning.
5. In experiential learning, mistakes committed, errors done, wrong decisions, crisis handled and problems faced are considered as learning opportunities rather than the indicators of bad performance. Students should be encouraged to face them, accept them, discuss them, and solve/ correct them.
6. To help students to reflect on their individual project experiences, a tool (questionnaire) called **Reflective Learning Portfolio** is used
7. When student attempts to fill this questionnaire, he/she encounters with few questions which provoke him/her to reflectively think on the project experiences. In this way student learns to reflect on self experiences and creates self-knowledge from self-experiences.
8. Following is the suggested format of Reflective Learning Portfolio (open ended questions with descriptive answers) :-

FORMAT OF PORTFOLIO

1. Student details (Name, Roll Number, Project group no. etc.)
2. Project title
3. Was our plan worked as it was or it has been changed?

   क्या हमारी कार्य योजना सही थी या फिर हमें इसमें आवश्यकतानुसार संशोधन भी करना पड़े?
4. Why the plan needed changes?

यदि हाँ, तो कार्य योजना में संशोधन क्यों करना पड़े? क्या क्या कारण थे?

5. What precautions we should take in future while planning the similar project activities?

   यदि हम भविष्य में इसी तरह के प्रोजेक्ट पर फिर से कार्य करते हैं तो योजना बनाते समय, पहले से ही क्या क्या अतिरिक्त सावधानीयाँ लेंगे?

6. Did I face group related problems? If yes, what major problems I faced?

   क्या प्रोजेक्ट पर कार्य करते समय हमें समूह संबंधी समस्याओं का सामना करना पडा? यदि हाँ, तो प्रनुख समस्याएँ कौन कौन सी थीं?

7. How I solved them?

   हमने उन्हें कैसे-कैसे हल किया?

8. What precautions I should take to avoid such group related problems in similar future project work?

   यदि भविष्य में हमें इसी तरह के प्रोजेक्ट पर फिर से कार्य करना पड़े तो इन समूह संबंधी समस्याओं को टालने के लिए हम पहले से ही क्या क्या सावधानीयाँ बरतेंगे?

9. Did we face problems related to resources? If yes, what were those problems?

   क्या हमें संसाधनों से सम्बन्धित समस्याएँ भी आयीं? यदि हाँ, तो वो कौन कौन सी थीं?

10. How we solved these problems?

    हम इन समस्याओं को कैसे कैसे हल कर पाए?

11. What precautions we will take to avoid such problems in future, if we work in similar project works?

    यदि हमें भविष्य में फिर से इसी तरह के प्रोजेक्ट पर कार्य करना पड़ता है तो हम इन समस्याओं से बचने के लिए पहले से

ही क्या क्या सावधानीयाँ बरतेंगे?

12. What was the worst incident in our project work? How we coped from it? What precautions we will take to avoid such incidences in future, in similar project works

    हमारे प्रोजेक्ट कार्य में सबसे खराब घटना क्या रही? हमने इसका सामना कैसे किया? भविष्य में दोबारा इसी तरह का प्रोजेक्ट करते समय इस तरह की घटना न घटे इसके लिए हम पहले से ही क्या-क्या उपाय करेंगे.

13. Did we face problems like delays, crisis of resources, and expenditure more than what was thought of earlier? What were those problems? How we solved them?

    क्या हमने विलम्ब, संसाधनों का संकट, अनुमान से अधिक खर्च आदि समस्याओं का सामना भी किया? वे समस्याएँ क्या क्या थी? उनसे हम कैसे कैसे निबटे?

14. What precautions we will take to avoid such problems in future, if we work in similar project works

    भविष्य में इसी तरह के प्रोजेक्ट कार्य को करते समय ऐसी समस्याओं से बचने के लिए हम पहले से ही क्या क्या उपाय करेंगे?

15. What advices, tips and suggestion related to project work we would like to give to our junior students?

    अब यह प्रोजेक्ट कार्य करने के उपरांत हम अपने जूनियर छात्रों को प्रोजेक्ट कार्य करने के लिए क्या क्या सुझाव एवं सलाह देना चाहेंगे ताकि उनका प्रोजेक्ट कार्य बगैर विघ्न-बाधा-समस्या के सरलता से पूर्ण हो सके? वर्णन करें.

9. Assessment criteria:-

- **a. Extent and appropriateness problems/ crisis/ delays / mis-happenings etc. described in detail (3marks)**
- **b. Extent and appropriateness coping strategies/ solutions/ handling ways described in detail (3 marks)**

c. **Extent and appropriateness of precautions/ suggestions/ advices/ tips described in detail (4 marks**)

RGPV (Diploma Wing) Bhopal	Scheme for Learning Outcome	Branch Code			Course Code			CO Code	LO Code	Format No. 4
					6	0	5	1	1	

COURSE NAME	**PROFESSIONAL DEVELOPMENT-VI**
CO Description	**Student will be able to plan his/ her career**
LO Description	**Student will be able to demonstrate his/her knowledge about career planning**

SCHEME OF STUDY

S. No	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Importance of career planning, major career opportunities in concerned branch of engineering / profession, related the career opportunity chart, study of the important career opportunities regarding qualification, knowledge, skills, experience required for them, role of personal factors like personal life style, interest areas, desires, personal preferences in career planning, professional networking	Traditional lecture method	Teacher will explain the terms / concepts mentioned in the content with help of examples and cases, explain various career opportunities in the concerned diploma branch, arrange formative assessment of students to identify weaknesses and provide necessary tutorials	07	03	Any standard book on career planning or handout	teacher will also suggest video film or other online learning resources

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Descriptive type questions will be asked in the test to assess the knowledge of the students	10	Test question paper, Answer sheet , rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Career: - A job or profession that somebody has been trained for and does for a long time; the series of jobs that somebody has in a particular area of work.

Career opportunity:-It is an opportunity related with career.

Career opportunity chart: - It is the chart (a poster) prepared by the faculty/department of concern branch of diploma, which represents various career opportunities and possible career paths in related fields of employment.

Career goals: - A career goal is a well-defined statement explaining the profession that an individual intends to pursue throughout his career. It is important for every job seeker to define their career goals clearly. It helps them to come up with effective action plans. Career goals must be realistic.

Career path: - A career path is a sequence of jobs that leads to your short- and long-term career goals.

Personal factors: - These are student's personal attributes like personality, interest areas, body conditions (handicapped, weight, eye sight etc.) which may affect his/her performance while pursuing the career.

Personal conditions: - These are the student's conditions like economic and social status, family conditions which also affects his/her choice and selection of career. The student should try to integrate their influences in his/her career plan in form of personal preferences.

Career planning: - It refers to the strategy a person uses to determine career goals and the path to achieve those goals.

Process of career planning: - 1. Student's self analysis of strengths, abilities, interest areas, personal preferences etc.

2. Analyzing the available career opportunities in concerned branch of diploma

3. self career goal setting

4. developing and implementing the action plan to achieve these goals

Assessment criteria:-

1. Student's understanding about career and career path (2 marks)
2. Student's knowledge about various career opportunities in branch of his/her diploma (2 marks)
3. Student's knowledge about various possible career paths in branch of his/her diploma (2 marks)
4. Student's understanding of role of personal factors and personal preferences in his/her planning of career (2 marks)
5. Student's knowledge about various steps in planning the career (2 marks)

RGPV (Diploma Wing) Bhopal	Scheme for Learning Outcome	Branch Code			Course Code			CO Code	LO Code	Format No. 4
					6	0	5	1	2	

COURSE NAME	**PROFESSIONAL DEVELOPMENT-VI**
CO Description	**Student will be able to plan his/ her career**
LO Description	**Student will be able to plan his/her career on basis of his/her diploma related studies**

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 detailing of important career opportunities in relation to branch of diploma, identification and detailing of important self personal factors and self personal preferences, development of self career plan	Teacher guided student activity	Teacher will guide students in identification and detailing of career opportunities, personal factors and personal preferences, guide them in preparation of their self career plan, arrange formative assessment to identify their weaknesses and conduct tutorials	02	08	Any suitable book on career planning or handout	If necessary teacher may also suggest video film or other online learning resources

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory assignment	Each student will develop his/her self career plan under the guidance of the faculty	15	Student assignment and rating list	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

SUGGESTED FORMAT for STUDENT's SELF - CAREER PLAN

1	Personal Information	Full name	
		Age	
		Gender	
		Existing qualification	
		Pursuing qualification	
2	Description of personal factors	Height	
		weight	
		Eye vision	
		Chronic deceases, illnesses	
		Handicapped-ness	
		My nature	
		My interest areas	
		My values	
3	Description of personal preferences	Description of family condition	
		Description of family economic status	
		Description of family social status	
4	Description of identified career opportunities		
5	Description of my career goals		
6	Description of my career path		
7	Time available for achieving my career goals		
8	Description of important qualifications/ experiences/ knowledge/ skills to be acquired		

9	Details of sources which can facilitate me in acquiring these	
10	Addresses/web addresses/ contact numbers of these sources	
11	Signature of student	

Assessment criteria:-

1. Appropriateness of identified career opportunities (3 marks)
2. Appropriateness of set career goals (3 marks)
3. Appropriateness of selected career path (3 marks)
4. Appropriateness of items described in point no. 8 (3 marks)
5. Appropriateness of details of sources (3 marks)

RGPV (Diploma Wing) Bhopal	Scheme for Learning Outcome	Branch Code			Course Code			CO Code	LO Code	Format No. 4
					6	0	5	2	1	

COURSE NAME	**PROFESSIONAL DEVELOPMENT-VI**
CO Description	**Student will be able to present self for employment**
LO Description	**Student will be able to prepare a quality CV, Resume and bio-data along with a covering letter for a job**

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 presenting self for employment, salient features and formats of bio-data, CV and resume, comparison of the three for their merits, limitations and specific uses, study of cases and examples of bio-data, CV and resume, creation of effective bio-data, CV, resume and covering letter by all students for self or for the given cases	Traditional lecture + student activity	Teacher will explain features and formats of bio-data, resume and CV, compare them, guide students to prepare self- bio-data, will provide cases and guide them to prepare case based resumes and CVs, arrange formative assessment to identify weaknesses in their learning and will provide tutorials	04	06	Any standard career guidance book or handout	Teacher will also provide video film or other online learning resources

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory assignment	Each student will prepare and submit a bio-data or resume or CV along with a covering letter, either for self or for the given case, as directed by the teacher	10	Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Bio-data: - Bio-data gives in simple format, a summary of personal details, educational details, and work experience details of job seeker. The emphasis in a bio data is on personal particulars like date of birth, religion, sex, race, nationality, residence, marital status, and the like. Next comes a chronological listing of education and experience. It is completed in 1-2 pages.

Resume: - Resume is a brief description of personal details, educational qualification, and past work experiences. It is designed to portrait candidate's suitability for a particular job. It does not list out all the education and qualifications, but only highlight specific skills customized to target the job profile. A resume is usually broken into bullets and written in the first person to appear objective and formal. It is completed in 1-2 pages.

Difference between bio-data and resume:-Resume is more focused on the past career of the person in relation to the job for which the candidate is applying. While, bio-data is more focused on the person and his/her academic/ professional achievements. .

Curriculum Vitai (C.V.):- It is a detailed summary of a person's career, qualification and education. A C.V. generally lists out every skills, jobs, degrees, and professional affiliations the applicant has acquired, usually in chronological order. It is completed in 3-4 pages.

Difference between C. V. and resume:--while CV provides comprehensive overview of your general professional profile, resume is focused on candidate's suitability for a specific job he/she interested in. The C.V. lists out every skill, jobs, degrees and professional affiliations the applicant has acquired in chronological order.

Formats of bio-data, resume and C.V.:- Various formats are available on internet. Teacher can adopt any of them which suits to the requirements of the student or the case given to him/her.

Covering letter: - it is a letter in simple format written / typed in first person, attached with the bio-data/resume/C.V. to send the bio-data/resume/C.V. to the job provider.

Assessment criteria:-

1. Appropriateness of the format selected (03marks)
2. Appropriateness of the descriptions provided in the bio-data/resume/CV (07marks)

RGPV (Diploma Wing) Bhopal	Scheme for Learning Outcome	Branch Code			Course Code			CO Code	LO Code	Format No. 4
					6	0	5	2	2	

COURSE NAME	**PROFESSIONAL DEVELOPMENT-VI**
CO Description	**Student will be able to present self for employment**
LO Description	**Student will be able to effectively participate in an employment related interview**

SCHEME OF STUDY

S. No	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Importance of employment related interviews, purpose of interview, dress code, body language and posture of interviewee, do's and not do's for interviews, interview checklist, practice of facing employment related interviews for all students	Traditional lecture + guided student practice	Teacher / expert will explain the terms / concepts mentioned in the content with help of examples and cases, arrange guided practice, will conduct formative assessment of students to identify their weaknesses and will provide necessary tutorials	04	06	Any standard book on job interview/ handout	Teacher /expert will also suggest video film or other online learning resources

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Teacher -student joint activity	Teacher will arrange a job interview of each student to assess his/her learning for participation in job interview	15	Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. College administration should hire professional expert who can prepare students for job interviews. Joint training sessions of two or more departments may be planned.

Interview:- It is essentially a structured conversation where one participant asks questions, and the other provides answers

Employment interview: - It is to assess the suitability of candidates for a particular job.

Assessment Criteria:-

1. Extent to which student follows appropriate dress code for interview (2 marks)
2. Extent to which student adopts appropriate body language and posture during the interview (3 marks)
3. Extent to which student follows the do's and not do's during the interview (10 marks)

RGPV (Diploma Wing) Bhopal	Scheme for Learning Outcome	Branch Code			Course Code			CO Code	LO Code	Format No. 4
					6	0	5	3	1	

COURSE NAME	**PROFESSIONAL DEVELOPMENT-VI**
CO Description	**Student will be able to plan his / her start-up or small business enterprise**
LO Description	**Student will be able explain his/her knowledge about various institutions and services available to facilitate start-up or small business enterprise**

SCHEME OF STUDY

S. No.	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Entrepreneurship and its importance, important characteristics of entrepreneurs, process for starting a new business, , incubation period and incubation support services, introduction to important Gov./non-Gov. agencies and their schemes to support startups and small business creations	Traditional lecture	Teacher/expert will explain the terms mentioned in content with help of cases and examples, conduct formative assessment of students' gained knowledge to identified weaknesses in their knowledge and will provide tutorials to them	07	03	Any suitable standard book on entrepreneur-ship and small business establishment or handout	If necessary teacher/expert may also suggest video film or other online learning resources

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper pen test	Descriptive type questions will be asked in the test to assess the knowledge of the students	10	Test question paper, Answer sheet	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

College administration should hire experts from market to motivate and train students for entrepreneurship, startup and small scale business establishment. Joint sessions for two or more departments may be organized.

Entrepreneurship: - It is the process of establishing a new business on basis of a novel business idea.

Entrepreneur:- A person who creates innovative ideas for business and establishes a new business

Important characteristics of an entrepreneur:-

1. High achievement motivation
2. High passion to achieve self set goals
3. High self discipline
4. Good risk taking ability
5. High ability to think creatively
6. Persistence

Process of starting a business:-

1. Create a great idea for solving a commercial problem which is being faced by a group of customers
2. Make a start-up (business) plan
3. Secure funding for the startup
4. Network with experts like legal advisers, C.A.s, insurance experts and bankers
5. Make sure you are following all legal steps for business setup
6. Establish a location (physical/online)
7. Develop a marketing plan
8. Build a customer base
9. Develop a plan to improve the business

Life stages of an enterprise: - 1. Idea creation, 2. Startup, 3. Expansion and 4. maturity

Business incubation:- It is the support provided to a new startup to protect it, to grow it and to let it expand into a sound business

Incubation support services:- Assistance in building management teams, developing business and marketing plans, funds, professional services, shared equipment, facilities and space etc.

Incubation support agencies:- Department for promotion and internal trade govt. of India, CIIE-IIM Ahmadabad, T-hub at IIT Hyderabad, GOK NASSCOM 10000 STARTUPS WAREHOUSE, GOK INCUBATOR FOR TECH START-UPS(GIFTS), GOK-MOBILE 10X START-UP HUB, BANGALORE BIO INNOVATION etc.

Agencies for supporting entrepreneurship and small business establishment: - CEDMAP, SIDO, NSIC, NI-MSME etc.

Assessment criteria :-

1. Student's understanding about entrepreneurship and characteristics an entrepreneur (3 marks)
2. Student's knowledge about business starting process and four phases of a business (3 marks)
3. Student's knowledge about business incubation support services (2 marks)
4. Student's knowledge about business incubation facilitating agencies (2 marks)

RGPV (Diploma Wing) Bhopal	Scheme for Learning Outcome	Branch Code			Course Code			CO Code	LO Code	Format No. 4
					6	0	5	3	2	

COURSE NAME	**PROFESSIONAL DEVELOPMENT-VI**
CO Description	**Student will be able to plan his/her start-up or small business enterprise**
LO Description	**Student will be able to plan his/her startup or small business enterprise**

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 self-business, market survey for seeking demand-supply gap, creating business idea for offering new product / service, conceptualizing the business, survey for availability and cost of appropriate technology /machines /raw materials /staff, estimation of various major expenses, financing, preparation of brief startup plan by the students	Traditional Lecture + guided student activity	Teacher /expert will explain the terms mentioned in content, will demonstrate planning through cases and examples, arrange guided practice for preparation of plan by students, arrange formative assessment and tutorials	04	06	Any suitable standard book or handout	If teacher /expert will also suggest video film or other online learning resources

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory assignment	Each student will prepare his/her startup plan in the format and will submit it to the teacher for its assessment	15	Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

College administration should hire experts from market to motivate and train students for planning startup and small scale business establishment. Joint sessions for two or more departments may be organized.

Marketing plan: - The ways in which product or service will be introduced in the target market. It includes sales price, advertizing etc**.**

Operational plan: - The ways in which mass creation of the product or service will be done**.**

Capital required: - Funds required for hiring the land, room, shed, machines, equipments, raw material, consumables etc.

Financial plan: - Ways and means for arrangement of capital.

Format for startup plan

1. Name of student and roll number
2. Brief Description of business idea
3. Brief Description of Field of business and target market
4. Brief Description of identified demand-supply gap or value addition
5. Brief Description or product or service to be provided
6. Brief Description of marketing plan
7. Brief Description of operational plan
8. Brief Description of staff
9. Brief Description of major expenses
10. Brief Description of capital required
11. Brief Description of financial plan

Assessment criteria :-

1. Appropriateness of business idea, demand-supply gap/value addition (5 marks)

2. Appropriateness of product or service and its marketing (5 marks)
3. Appropriateness of staff and operational plan (3 marks)
4. Appropriateness of major expenses, capital required and financial plan (2 marks)