

RGPV(DiplomaWing) Bhopal							SEMESTERTEACHINGLEARNING&ASSESSMENT PLAN					FORMAT-6						
NAME OF PROGRAMME			THREE YEARS DIPLOMA				SCHEME	OCBC20	IMPLEMENTINGYEAR			2020-21						
BRANC H CODE	M07		NAMEOFBRANCH				MINING AND MINESURVEYING			SEMESTER	IV							
S. N O	COURSE DETAILS						T& P-LPLAN			ASSESSMENT PLAN								
	COUR SE CODE	COUR SE NAME	CREDITS	PAPE R COD E	No. of CO S	No .of LOs	Tota IT- L Hrs.	Tota IP- L Hrs.	(T+P)- LHrs. /Week	Internal Assessme nt		ExternalAssessment(UniversityExam)						Gran d Total of Mark s
										TheoryPaper			PracticalExam*					
										No .of LO S	Total Mark s		No .of LO S	Total Mark s	Duratio n	No .of LO S	Total Mark s	
1	401	Advanced Geology	4	7226	5	16	5	4		30+20		70			30		150	
2	402	Applied Civil Engg	4+2	7227	5	12	5	4		30+20		70			30		150	
3	403	Method Of Working Coal and Metal	4+2	7228	5	17	6	4		30		70					100	
4	404	Basic Electrical and Electronics	4+2	6933	5	15	6	4		30+20		70			30		150	
5	405	PROFESSIONAL DEVELOPMENT-V		----	3	06	-	4		75							75	
							22	14	36								625	
									No. of Theory Papers			04	No.of Practical Exams			04		

MINING AND MINE SURVEYING

NAME OF COURSE-Advance Geology

OCBC19

FORMAT SHEET

3 T

RGPV(DIPLOMA WING)BHOPAL

BRANCH -MINING AND MINE SURVEYING NAME OF COURSE : Advance Geology

SEMESTER -IV

Teaching Hours

Marks

COURSE OUTCOME 1 Student will be able to explain / describe the formation method of coal and ore deposit

LEARNING OUTCOME-1.1 Student will be able to outline the coal formation methods with reference to lower gondwana coalfields

CONTENTS Ranks of a coal, various type of coal-peat, Lignite, Bituminous coal, Anthracite and cannel coal. Banded constituents of coal, chemical properties of coal structural features of coal seam. Origin of coal in situ theory, drift theory, formation of coal preservation, Biochemical change, Carbonization and metamorphism. Occurrence of coal in India. A brief outline of the lower gondwana coalfields.

METHOD OF ASSESSMENT Internal: Mid Semester Exam - Pen paper test/Assignment

9 10

LEARNING OUTCOME-1.2 will be able to describe the origin of petroleum deposits, minerals and ores.

Petroleum, Origin of petroleum migration of petroleum. Oil traps, types of oil traps, petroleum deposits of India.

CONTENTS Ore and mineral deposits of India - A brief account of origin, occurrence, distribution of following minerals and ores - gold, iron, manganese, copper, lead & zinc, aluminium, chromite and mica.

METHOD OF ASSESSMENT External : End semester Examination-Pen Paper Test

8 8

LEARNING OUTCOME 1.3 able to identify common ore and mineral hand specimens.

CONTENTS Gold, iron, manganese, copper, lead & zinc, aluminium, chromite and mica.

METHOD OF ASSESSMENT Internal : Task /Experiment performance in lab

10 10

LEARNING OUTCOME-1.4 able to summarise the economical uses of minerals and ores .

CONTENTS Economical uses of following minerals and ores - gold, iron, manganese, copper, lead & zinc, aluminium, chromite and mica.

METHOD OF ASSESSMENT External : End semester Examination-Pen Paper Test

5 5

COURSE OUTCOME LEARNING OUTCOME 2.1 Able to comprehend the Indian stratigraphy
Able to explain the Geological time scale and Physiographic divisions of India.

CONTENTS Principles of stratigraphy, principles of correlation, geological time scale, stratigraphic classification of Indian rock formations.

Physiographic divisions of India-Indian peninsular India, indogangetic plan and extrapeninsular India.

METHOD OF ASSESSMENT External : End semester Examination-Pen Paper Test

9 10

LEARNING OUTCOME 2.2 Able to Describe the system of Indian stratigraphic units

Archaean system-A brief account of the dharwar system, sautor group, Iron-Ore group, Archaean rocks of Rajasthan, Economic Minerals of Archeean rocks.

Cuddapah system-cuddapah rocks of cuddapah basin Andhra Pradesh, Delhi System economic minerals of cuddapah rocks.

CONTENTS Vindhyan system-A brief account of the Vindhyan rocks of North India. Economic minerals of vindhyan rocks.

Gondwanas system-A brief account of the gondwana rocks of India. Economic minerals of the Gondwana rocks.

Deccan Traps-A brief account of the Deccan traps of India. Economic Importance of Deccan traps.

METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	10	12
LEARNING OUTCOME 2	Able to Sketch the Geomorphological and structural model		
CONTENTS	Sketch the given Geomorphological and structural model.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab	10	10
COURSE OUTCOME-3	Able to identify the deposition of various modes of ores.		
LEARNING OUTCOME-3.1	Define the terminology of ore deposits. Out line of the Classification of ore deposits		
CONTENTS	Concept of ore mineral, gangue and Tenor of ores, A brief out line of the Classification of ore deposits.		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment	9	10
LEARNING OUTCOME-3.2	Able to differentiate the various type of ore deposits		
CONTENTS	Magmatic ore deposits early magmatic, late magmatic. Pegmatic deposits, sublimation deposits, contact metasomatic deposits. Hydrothermal deposits classification of hydrothermal deposits cavity filling deposits, Types of cavity filling deposits, replacement deposits, Types of replacement deposits. Sedimentation deposits, Evaporation deposits, residual deposits, Mechanical concentration deposits (placer deposits), Types of placer deposits. Oxidation and supergene enrichment deposits, metamorphic deposits.		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	9	10
LEARNING OUTCOME 3.2	Able to Construct the geological cross section from geological map		
CONTENTS	Maps showing unconformity, maps showing folds, maps showing faults, maps showing faults, maps showing igneous intrusion.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab	10	10
COURSE OUTCOME-4	Able to describe various prospecting methods.		
LEARNING OUTCOME-4.1	Able to describe the Ground prospective method.		
CONTENTS	Ground prospective method. A brief outline of various prospecting methods, surface prospective methods, geological mapping, trenching, augering, wash boring, and drilling.		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment	9	10
LEARNING OUTCOME-4.2	Able to describe the Geophysical prospective method.		
CONTENTS	Geophysical prospecting methods, elementary study of gravity, magnetic, electrical resistivity and seismic method of prospecting.		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	5	5
LEARNING OUTCOME-4.3	Able to describe the chemical prospective method.		
CONTENTS	Sampling, geochemical analyses, interpretation of data.		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	5	5
COURSE OUTCOME-5	Able to differentiate types of the ground water .		
LEARNING OUTCOME 5.1	Able to explain the phenomenon related to ground water		
CONTENTS	Hydrological cycle, Erosion, transportation and Deposition, Depositional feature ,		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test		

ASSESSMENT		4	5
LEARNING	Able to explain the phenomenon related to occurrence ground water		
OUTCOME 5.2			
CONTENTS	Zone of aeration, saturation, water Table, aquifer, pressure surface and artesian.		
METHOD OF	External : End Semester Theory Exam - Pen paper test		
ASSESSMENT		4	5
LEARNING	Able to Predict the movement of ground water.		
OUTCOME 5.3			
CONTENTS	Opening of rocks,porosity,permeability, Darcy's law of ground water motion, specific yield and specific retention.		
METHOD OF	External : End Semester Theory Exam - Pen paper test		
ASSESSMENT		4	5

MINING AND MINE SURVEYING
NAME OF COURSE-Applied Civil Engineering

OCBC19

FORM SHEET
AT 3 NO1

RGPV(DIPLOMA WING)BHOPAL

BRANCH -MINING AND MINE SURVEYING

NAME OF COURSE : Applied Civil
Engineering

SEMESTER -IV

Teaching
Hours Marks

COURSE OUTCOME 1	Able to select the general materials and technology that is used in common civil work.		
LEARNING OUTCOME-1.1	Able to conduct laboratory tests to check the quality of bricks.		
CONTENTS	Type of bricks, good quality of bricks, laboratory test of bricks.		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment.		
		7	10
LEARNING OUTCOME-1.2	Able to select the stone aggregates.		
CONTENTS	Requirement of good quality of stone, test for stone, selection of stone for different civil works, coarse and fine aggregates, Fitness modules.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test		
		7	7
LEARNING OUTCOME 1.3	Able to check the quality of cement and steel .		
CONTENTS	Composition of cement, Type of cement,Laboratory test & Field test on cement. STEEL & STEEL PRODUCT; Composition of steel, change in properties due to alloying, impurities in steel,steel alloy, defect in steel, steel section, test of MS bar.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test		
		7	7
LEARNING OUTCOME-1.4	Able to Characterise good timber.		
CONTENTS	Characteristics of good timber, defect in timber, preservatives, seasoning of timber		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test		
		5	5
COURSE OUTCOME 2	Able to define the purpose of various parts of construction		
LEARNING OUTCOME 2.1	Detail of foundation.		
CONTENTS	Necessity of foundation , bearing capacity & safe bearing capacity, type of foundation, shallow foundation, deep foundation, selection of type of foundation, procedure to give layout, different terms, centre line plan, foundation plan, checking the accuracy of layout, utility of control point.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test		
		10	10
LEARNING OUTCOME 2.2	Able to Summarize the masonry.		
CONTENTS	Type of masonry, necessity bond of bricks, masonry, type of stone masonry, dry stone masonry, revetment.		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment.		
		7	10
LEARNING OUTCOME 2.3	Able to prepare the concrete.		
CONTENTS	Ingredients in cement concrete properties of ingredient, grade & strength of concrete, nominal mix controlled concretes, work ability of concretes, slum test, water cement ratio, test for compressive strength of concrete, factors which affect the quality of concrete, use of reinforcement in concrete, R.C.C.& P.C.C.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test		
		10	10

COURSE OUTCOME-3	able to demonstrate appropriate surveying alignment for road and rail setup.		
LEARNING OUTCOME-3.1	Able to manipulate road alignment.		
CONTENTS	Type of Roads, General detail of Roads Construction. Topographical survey - Establishing survey control points, Levelling, Detailed Topographical survey, Cross-section Surveys.		
METHOD OF ASSESSMENT	Design. Drainage. External : End semester Examination-Pen Paper Test	7	7
LEARNING OUTCOME-3.2	Able to manipulate rail alignment.		
CONTENTS	Survey for track alignment, Traffic Survey, Reconnaissance survey-instrument.Preliminary survey-instrument, Detail survey or final location survey.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	5	5
COURSE OUTCOME-4	Able to comprehend the work of general constructional details of bridge & dam.		
LEARNING OUTCOME-4.1	Able to comprehend the construction of bridges.		
CONTENTS	SIMPLE CONSTRUCTION DETAIL OF BRIDGES :- Components of Culverts- causeways. Type of Bridge. Slab Bridge, T-beam and Slab Bridge, Suspension Bridge.		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment.	6	10
LEARNING OUTCOME-4.2	Able to describe the purpose of various types of dams.		
CONTENTS	Purpose of dams. Earthen Dam & Gravity Dam		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	5	5
COURSE OUTCOME-5	Able to estimate the economical aspect of construction work		
LEARNING OUTCOME 5.1	Able to estimate the Quantities.		
CONTENTS	Introduction – Main items of work-calculation of quantities earth work, stone masonry, brick masonry, plastering, cement concrete, R.C.C., Doors, Windows, Flooring, White washing, Distempering and their units.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	7	7
LEARNING OUTCOME 5.2	Able to prepare cost analysis.		
CONTENTS	Factors affecting rates – importance – Materials for different items of work – Rates of materials and labour – analysis of Rates for cement concrete, R.C.C., brick masonry, Stone masonry, Hollow		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	7	7

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 1/3	
Branch	MECHANICAL ENGINEERING			Semester		III	
Course Code		Course Name			BASIC ELECTRICAL AND ELECTRONICS		
Course Outcome 1		Calculate electrical quantity for given electrical circuit			Teach Hrs	Marks	
Learning Outcome 1		Define various terms used in electrical engineering. (Cognitive domain)			4	5	
Contents		<ul style="list-style-type: none"> ● Concept of electric current, potential and potential difference. ● Classification of D.C. and A.C. sources. ● Overview of AC voltage generation, transmission and distribution. ● Electrical Power, energy and their units. 					
Method of Assessment		Internal : Mid semester Test-1 (Pen paper test)					
Learning Outcome 2		Explain fundamentals of D.C. circuit and calculate electrical quantity. (Cognitive domain)			10	12	
Contents		<ul style="list-style-type: none"> ● Ohm's Law, Concept of resistance, conductance, resistivity, conductivity and their units. Effect of temperature on resistance, Temperature coefficient of resistance. ● Series, Parallel connections of resistance and their combinations, Simple Numerical. ● Kirchhoff's Voltage Law, Kirchhoff's Current Law, Simple Numerical 					
Method of Assessment		External : End semester theory examination (Pen paper test)					
Learning Outcome 3		Explain fundamentals of A.C. circuit and determine electrical quantity of single phase AC circuit. (Cognitive domain)			10	12	
Contents		<ul style="list-style-type: none"> ● Concept of Cycle, Frequency, time period, amplitude, phase and phase difference. ● Define Instantaneous value, average value, RMS value and peak value of sinusoidal electrical quantities, form factor and peak factor. ● Concept of reactance, impedance and power factor in AC circuit. ● Concept of current, voltage, power in purely resistive, inductive, capacitive, RL, RC and RLC Series circuit ● Active power, reactive power and apparent power. ● Three phase AC supply: three phase three wire and three phase four wire system, Relationship between line voltage, phase voltage, line current and phase current in star and delta connection . 					

Method of Assessment	External : End semester theory examination (Pen paper test)		
Learning Outcome 4	Verify Kirchhoff's laws and determine the electrical quantities for a given electrical circuit. (Psychomotor domain)	10	12
Contents	<ul style="list-style-type: none"> • Verification of Kirchhoff's current Law and Kirchhoff's voltage Law • Calculate Impedance, power and power factor by measuring voltage across each element and current for a given RLC series circuit. 		
Method of Assessment	External: End semester practical exam- Performance of task and viva voce		
Course Outcome 2	Select an appropriate electrical machine for particular application.	Teach Hrs	Marks
Learning Outcome 5	Describe various parts of the DC machines, explain the working principle and applications of DC generator (Cognitive domain)	8	10
Contents	<ul style="list-style-type: none"> • Concepts of Electromagnetism, Faraday's Law, Lenz's Law, Fleming's Left Hand and Right Hand Rule. • D.C. Machines: Construction, its main parts & their functions and classification. • D.C. Generator: Working principle, emf equation • Types and applications of DC Generators. 		
Method of Assessment	Internal : Mid semester-I theory examination (Pen paper test)		
Learning Outcome 6	Explain the working principle and choose a DC motor for particular application. (Cognitive domain)	4	6
Contents	<ul style="list-style-type: none"> • D.C. Motor: Working principle • Significance of back emf, torque equation • Types and applications of DC motors • Need of starter 		
Method of Assessment	External: End semester theory examination (Pen paper test)		
Learning Outcome 7	Describe various parts of the AC machine, explain its working principle and select the AC machine for particular application.(Cognitive domain)	12	12
Contents	<ul style="list-style-type: none"> • Single Phase Transformer: Construction, working principle, emf equation, transformation ratio, simple numerical. • Step up and step down transformers and their application. • Three-phase Induction motor: Construction, types, principle of operation, concept of Slip and applications. • Single-phase Induction motor: types of single phase induction motor- capacitor start, capacitor run, shaded pole and their applications. 		

Method of Assessment	External: End semester theory examination (Pen paper test)		
Learning Outcome 8	Apply field & armature control methods to vary speed of DC shunt motor and perform open circuit & short circuit test on single phase transformer to determine losses and efficiency (Psychomotor domain)	10	13
Contents	<ul style="list-style-type: none"> Field and armature control methods of DC shunt motor. Open circuit & short circuit test of single phase transformer. 		
Method of Assessment	External: End semester practical exam- Performance of task and viva voce		
Course Outcome 3	Use electrical measuring instruments and justify the need of the transducers. (Cognitive domain)	Teach Hrs	Marks
Learning Outcome 9	Select an appropriate instrument for measurement of electrical quantities (Cognitive domain)	10	12
Contents	<ul style="list-style-type: none"> Classification of Measuring Instruments: Absolute and secondary instruments. Indicating, Integrating and Recording instruments with examples. Working principle and construction of moving iron & moving coil type ammeter and voltmeter, electrodynamic type wattmeter, induction type and electronic energy meter. 		
Method of Assessment	External: End semester theory examination (Pen paper test)		
Learning Outcome 10	Classify different types of transducer. (Cognitive domain)	8	10
Contents	<ul style="list-style-type: none"> Transducer: Definition, primary and secondary transducers, active and passive transducers, analog and digital transducers. Principle and application of Strain gauge, LVDT, Thermocouple, Piezoelectric and Photoelectric Transducers. 		
Method of Assessment	Internal : Mid semester-II theory examination (Pen paper test)		
Learning Outcome 11	Measure various electrical quantities by using suitable measuring instruments. (Psychomotor and affective domain)	12	15
Contents	<ul style="list-style-type: none"> Measurement of insulation resistance by megger. Measurement of earth resistance by earth tester. Measurement of linear displacement by LVDT. 		
Method of Assessment	Internal: Performance of task, observation and viva voce		
Course Outcome 4	Analyze various electronic devices and circuits.	Teach Hrs	Marks
Learning Outcome 12	Explain concepts of various semiconductor devices and circuits.(Cognitive domain)	8	10

Contents	<ul style="list-style-type: none"> ● Semiconductor PN Junction Diode, Zener diode, PNP and NPN transistor ● Forward and reverse bias of semiconductor diode. ● Applications of semiconductor diode, zener diode and transistor ● Single phase half wave and full wave rectifier: Circuit diagram, working and input-output waveforms. 		
Method of Assessment	External: End semester theory examination (Pen paper test)		
Learning Outcome 13	Plot the V-I characteristics of semiconductor diode and measure output voltage of single phase rectifiers. (psychomotor domain)	8	10
Contents	<ul style="list-style-type: none"> ● V-I characteristics of semiconductor diodes. ● Measurement of output voltage in single phase half wave and full wave rectifier. 		
Method of Assessment	External : Performance of task and viva voce		
Course Outcome 5	Select electrical wiring material and apply electrical safety measures.	Teach Hrs	Marks
Learning Outcome 14	Choose electrical wiring materials. (Cognitive domain)	4	5
Contents	<ul style="list-style-type: none"> ● Types of Wiring and their Applications. ● Size of conductor, Standard Wire Gauge. ● Electrical Fixtures: switches, fuses, holders, sockets and MCB's. 		
Method of Assessment	Internal : Mid semester test II (Pen paper test)		
Learning Outcome 15	Identify electrical safety measures in various working conditions. (Cognitive domain)	4	6
Contents	<ul style="list-style-type: none"> ● Electric shock, its prevention, effect of electrical current on the human body and shock treatment. ● Earthing: Need and types of earthing. 		
Method of Assessment	External: End semester theory examination (Pen paper test)		

Reference books

1	Basic Electrical Engineering, McGraw Hill Education, Noida, ISBN: 978-00-705-9357-2	Mittle, V.N. and Mittle, Arvind
2	Electrical Circuits (Hindi), Satya Prakashan New Delhi	Suresh Kumar Soni and Umesh Kumar Soni
3	A Text Book of Electrical Technology Vol-I, Vol-II and Vol-IV, S. Chand & Co. Ram-nagar, New Delhi,	Theraja, B. L. and Theraja, A. K.,
4	Electrical Machines, Vol-I, II, Khanna Book Publishing House, New Delhi 2 (ISBN: 978-9386173-447, 978-93-86173-607)	Bimbhra, P.S.
5	Electrical Measurements and Measuring Instruments, S. K. Kataria and sons, Delhi, ISBN: 9788188458264	Gupta J. B.
6	Electrical Installation Estimating & Costing, S. K. Kataria and sons, Delhi	Gupta J. B.
7	Principles of Electronics, S. Chand Publications, Delhi	V K Mehta and Rohit Mehta

MINING AND MINE SURVEYING
NAME OF COURSE- Method of working (Coal+Metal)

OCBC19

FORMAT 3

SHEET
NO1

RGPV(DIPLOMA WING)BHOPAL

BRANCH -MINING AND MINE SURVEYING

NAME OF COURSE : Method of
working (Coal+Metal)

SEMESTER -IV

Teaching
Hours

Marks

COURSE OUTCOME 1	To supervise the mining of coal by bord and pillar method and get the development and depillaring operations carried out with safety.		
LEARNING OUTCOME-1.1	Able to describe the board and pillar working method.		
CONTENTS	Classification of method of working. Conditions for selection of method of working. Bord and pillar- applicability advantages and disadvantages. Calculation of percentage of extraction. Design of panel		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment	9	10
LEARNING OUTCOME 1.2	Able to differentiate study the various working layout.		
CONTENTS	Different layout classification SDL chain conveyer layout Continuous miners LHD layout		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	7	8
LEARNING OUTCOME 1.3	able to sketch and describe layout .		
CONTENTS	Sketch and describe pit top and pit bottom layout.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab.	10	10
LEARNING OUTCOME-1.4	Able to demonstrate various activities in board and pillar methaad.		
CONTENTS	Manpower calculation and OMS. Open & closed panel system. Preparatory arrangements before depillaring. Line of extraction and numbering of pillars. Systematic support rules. Different types of pillar extraction methods. Caving. Stowing.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	7	8
LEARNING OUTCOME 1.5	Able to Draw the plan of board and pillar method.		
CONTENTS	Plan an under ground coal mine (bord & pillar method) under given conditions and required out put.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab.	10	10
LEARNING OUTCOME 1.6	Able to interpret the special condition of board and pillar method.		
CONTENTS	Thick seam working. Precautions while working near - restricted areas, working near fire area, working below waterlogged area and working below depillared goaf. Contiguous working of seams. Case study.		
METHOD OF ASSESSMENT	External : End semester Examination-Pen Paper Test	7	8
COURSE OUTCOME 2	Able to operate the mining of coal by long wall methods.		

LEARNING OUTCOME 2.1	Able to manipulate the operations of longwall mining method.		
CONTENTS	<p>Applicability. Design of long wall panel. Factors affecting length of long wall face, Barrier width, gate road length. Long wall advancing. Long wall retreating. Cyclic long wall. Non cyclic long wall.</p>		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment	9	10
LEARNING OUTCOME 2.2	Able to estimate the requirements longwall method.		
CONTENTS	<p>Different machines used. Layout of DERD manpower calculation. Thick seam working with long wall. Top slicing and sub level caving. Long wall caving and stowing.</p>		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	7	8
LEARNING OUTCOME 2.3	Able to draw the plan of longwall method.		
CONTENTS	Plan an under ground coal mine (longwall method) under given conditions and required output.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab	10	10
COURSE OUTCOME 3	Able to manipulate the operations in underground metal mines.		
LEARNING OUTCOME 3.1	Able to describe the metal mines terminology.		
CONTENTS	<p>Terms and Terminology used in metal mines. Types of ore bodies.</p>		
METHOD OF ASSESSMENT	Internal: Mid Semester Exam - Pen paper test/Assignment	9	10
LEARNING OUTCOME-3.2	Able to Illustrate the different types of drivage method.		
CONTENTS	<p>Types of underground opening, location of openings. Opening up of a mineral deposit by vertical shaft, inclined shaft, Adit. Level interval, factor considered while deciding level interval, length of back. Drivage of raises and winzes Driving manually, Modern methods Alimak raise climber, long hole method, Drop raising, raise boring.</p>		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	9	10
LEARNING OUTCOME 3.3	Able to Sketch & describe drivage method		
CONTENTS	Modern methods Alimak raiser, long hole method, Drop raising, raise boring.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab.	10	10
COURSE OUTCOME-4	Able to manipulate development and stoping operations in underground metal mines.		
LEARNING OUTCOME-4.1	Able to select appropriate stoping method.		
CONTENTS	<p>Classification and choice of stoping Methods. Open stoping methods, underhand, overhand, Breast stoping ,sublevel stoping, Blast hole stoping, VCR , Shrinkage method, their conditions of applicability, sequence of development, stoping operation, cycle of operations.</p>		

METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	7	8
LEARNING OUTCOME 4.2	Able to Sketch/execute the stoping method		
CONTENTS	Open stoping methods, underhand, overhand, Breast stoping ,sublevel stoping, Blast hole stoping, VCR , Shrinkage method.		
METHOD OF ASSESSMENT	Internal : Task /Experiment performance in lab.	10	10
COURSE OUTCOME-5	able to operate the supported stoping methods.		
LEARNING OUTCOME 5.1	Able to describe the various supported stoping methods.		
CONTENTS	Artificially supported methods cut and fill, square set, stulled stoping methods. Their applicability, stope Preparation, stoping operation, cycle of operation, relative merits and demerits etc.		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	7	8
LEARNING OUTCOME 5.2	Able to explain the different types of caving methods.		
CONTENTS	Caving methods - Top slicing, sublevel caving and block caving methods, applicability, stope preparation, cycle of operation etc.		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	6	6
LEARNING OUTCOME 5.3	Able to apply the provision of MMR 1961.		
CONTENTS	Provision of MMR 1961 regarding Means of Access and Egress, Ladders and ladder ways.		
METHOD OF ASSESSMENT	External : End Semester Theory Exam - Pen paper test	6	6

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME				Branch Code			Course Code			CO Code	LO Code	Format No. 4
						M	0	2	3	0	5	1	1	
COURSE NAME	Professional Development-III													
CO Description	Student will be able to perform as the team leader of small team for solving a team problem in the given situation													
LO Description	Student will be able to demonstrate his/her understanding of leadership required in a team work performance													
SCHEME OF STUDY														
S. No.	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks							
1.	Team leaders, importance of team leader, role of team leaders, important qualities of good team leaders, behaviors of good team leaders	Traditional lecture method + Case Study	Teacher will explain about the contents along-with examples/cases, will give assignment for practice, will conduct tutorials and remedial.	05	05	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	Paper pen test	A test will be designed and administered by the teacher to assess the understanding of student. Assessment will be done through Rating Scale.	10	Test paper and Rating Scale	Internal									
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)														
Important qualities of team leader:- will be able to <ol style="list-style-type: none"> 1. to take initiatives 2. take responsibility on behalf of group 3. to visualize the team event and plan things for the event 4. to take interest to carry out related activities 														

5. to take interest in solving team related problems

The test questions :-

1. Explain the importance of team leadership
2. Explain important qualities of good team-leaders
3. Identify the team leader's behavior in the following list of team persons' behavior
4. Identify the team leader in the following case of team event
5. Suggest the team leader's would be course of action in the following team problem situation

Performance indicators

1. Quality of response the Q. 1
2. Quality of response to Q. 2
3. Number of correct behaviors identified in Q. 3(Max. 3 correct behaviors out of 10)
4. Correct team leader identified or not, in Q. 4
5. Correct team leader course of action suggested or not, in Q. 5

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2	3	0	5	1	2	
COURSE NAME	Professional Development-III												
CO Description	Student will be able to perform as the leader of small team for solving a team problem in the given situation												
LO Description	Student will be able to play role of the leader of a team for solving a team problem in the given situation												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Team leaders, importance of team leader, role of team leaders, important qualities of good team leaders, behaviors of good team leaders	Case Study method	Teacher will organize a students' team event in class/ department. Few students will be asked to play roles of team members and the leader to solve team problems under given situation. Other students will observe. Afterward, teacher will discuss with students. Teacher will organize similar events for practice.	02	08	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's role play	The teacher will organize small team events in batches in which individual students will be asked to play role of leader to solve a team problem, under given situation. Teacher will observe and assess the extent of leader's behavior performed by students on the basis of performance indicators	15	Rating Scale	Internal								
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
<p>The assessment will be done on basis of following performance indicators:-</p> <ol style="list-style-type: none"> 1. Extent to which student take initiatives 2. Extent to which student take responsibility on behalf of group 3. Extent to which student visualize the team event and plan things for the event 4. Extent to which student take interest to carryout team related activities 													

5. Extent to which student take interest in solving team related problems

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
								3	0	5	2	1	
COURSE NAME		Professional Development-III											
CO Description		Student will be able to apply professional ethics in a given problem situation											
LO Description		Student will be able to demonstrate his/her understanding of professional ethics											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Professional ethics, its need and importance, seven ethics common to all professionals, general code of ethics for engineers, ethical issues for engineers, common problems related to professional ethics, ethical issues, identification of ethical issues in cases for engineers.	Traditional lecture method + Case Study	Teacher will explain about the contents along-with examples/cases, will give assignment for practice, will conduct tutorials and remedial.	05	05	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	Paper pen test	A test will be designed and administered by the teacher to assess the understanding of student. Assessment will be done through Rating Scale.	10	Test paper and Rating Scale				Internal					

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

1. Ethics common to all professions

- honesty
- trustworthiness
- loyalty
- respect for others
- adherence to the law
- doing good and avoiding harm to others
- Accountability.

2. General code of ethics for engineers:-

1. Respect for People's Dignity and Rights
2. Responsible Practice
3. Integrity in Relationships
4. Responsibility

3. Common Ethical issues for engineers:-

- Relationships with clients, consultants, competitors, and contractors
- Ensuring legal compliance by clients, client's contractors, and others
- Conflict of interest
- Bribery and kickbacks, which might include:
Gifts, meals, services, entertainment and recreation opportunities
- Treatment of confidential or proprietary information

- Consideration of the employer's assets
- Outside employment/activities

Test Performance Indicators:-

Extent to which student will be able

1. To explain the professional ethics (2 marks)
2. To explain the need and importance of professional ethics (2 marks)
3. To explain seven ethics common to all professions (2 marks)
4. To identify the problem related to professional ethics in given list of problems (2 marks)
5. To identify the ethical issue for an engineer in a given case of professional ethics (2 marks)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
								3	0	5	2	2	
COURSE NAME	Professional Development-III												
CO Description	Student will be able to apply professional ethics in a given problem situation												
LO Description	Student will be able to apply appropriate professional ethics in a given problem situation												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Procedure of solving the problems related professional ethics, Identification of ethical issue, identification of the ethical stand, searching various possible solutions for the problem keeping ethical stand in focus, selection of appropriate solution.	Traditional lecture method + Case Study	Teacher will explain about the contents along-with examples/cases, will give assignment for practice, will conduct tutorials and remedial.	05	05	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	Paper pen test	A case based test on problem of ethical issue for an engineer will be designed and administered by the teacher to assess the ability of students to solve the ethical problem; Assessment will be done through Rating Scale.	15	Test paper and Rating Scale	Internal								

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Steps in solving ethical problems:-

1. Identify the ethical issue in the problem
2. Identify the ethical stand in the problem
3. Search for various possible solutions keeping focus on the ethical stand
4. Implement the best possible solution

Performance indicators:-

1. Correctness of identified ethical issue in the problem (3 marks)
2. Correctness of identified ethical stand (3 marks)
3. Quality of suggested possible solutions (2marks)
4. Appropriateness of selected best possible solution (2 marks)

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					M	0	2	3	0	5	
COURSE NAME	Professional Development-III										
CO Description	Student will be able to plan self-learning to complete the given task										
LO Description	Student will be able to identify the self-learning needs for completing the given task										
SCHEME OF STUDY											
S. No.	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1.	Lifelong learning, its examples, self-directed learning, its examples, important steps in lifelong learning, identification of learning needs	Traditional lecture method + Case Study	Teacher will explain about the contents along-with examples/cases, will give assignment for practice, will conduct tutorials and remedial.	05	05	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal						
1	Assessment through student activity	A Self-assessment portfolio will be prepared by the student on the task assigned by the teacher. Assessment of portfolio will be done through Rating Scale.	10	Portfolio format and Rating Scale	Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
<p>1. Lifelong learning</p> <p>All learning activities undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. It is voluntary, self-initiated and self-directed learning.</p> <p>Examples:-</p>											

1. We learn to use smart phones (informal learning)
2. We learn yoga by joining a one week yoga training programme organized by a private spiritual institute (formal learning).

2. Self directed learning

A process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes.

3. Essential steps of lifelong learning

1. Identification of self learning need (what to learn)
2. Searching about how I can learn, search of learning resources and ways/means to use them for learning
3. Planning self-learning
4. Implementing the plan

4. Suggested list of tasks for practice of identification of learning needs

1. You have to repair your faulty house-hold electric iron
2. You have to daily operate the new washing machine purchased at your home
3. You have to format your PC
4. You have to attend online class using meet.google app
5. You have to share your ideas online with your distant friends. You have to arrange a webinar
6. You have to visit abroad and therefore you have to apply for passport
7. Your mother is a patient of high BP. You have to measure her BP daily two times at home with traditional BP measuring apparatus
8. Your bike is not getting started. You have to check its spark plug.
9. You have to complete bank paper formalities for bank loan to establish your small manufacturing unit
10. You have to prepare French-fries at home.

5. Self-assessment portfolio

A questionnaire in which questions are in first person and space is provided after each question to write the answer. It is prepared by the student.

6. Self-assessment portfolio questions:-

1. Can I complete this task ?
2. Is there special knowledge or skill required to complete the task ?

3. What knowledge or skill is required to complete this task ?
4. Do I have this knowledge or skill ?
5. From where I can learn this knowledge or skill. (Mention at least three sources. Sources may be people, institutions, books, websites?)
6. How I can manage to learn this knowledge or skill?

7. Indicators of performance

1. Able to identified that he/she can-not complete the given task due to lack of knowledge or skill
2. Able to identified the need for special knowledge or skill to complete the task
3. Correctness of identified knowledge or skill required to complete the task
4. Appropriateness of sources from which student can learn knowledge or skill
5. Extent of feasibility of student's way to acquire the required knowledge or skill

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2	3	0	5	3	2	
COURSE NAME	Professional Development-III												
CO Description	Student will be able to plan self directed learning to complete the given task												
LO Description	Student will be able to plan self directed learning for completing the given task												
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, need for planning self directed learning, planning self directed learning, self directed learning plan, examples.	Traditional lecture method + Case Study	Teacher will explain about the contents along-with examples/cases, will give assignment of preparing self-directed learning plan for practice, will conduct tutorials and remedial.	05	05	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Assessment through student activity	A self directed learning plan will be prepared by the student on the task assigned by the teacher. Assessment of the plan will be done through Rating Scale.	15	Plan format and Rating Scale			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
<p>1. Self directed learning</p> <p>A process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes.</p> <p>3. Essential steps of lifelong learning</p> <p>5. Identification of self learning need (what to learn)</p>													

6. Searching about how I can learn, search of learning resources and ways/means to use them for learning
7. Planning self directed learning
8. Implementing the plan

4. Contents of the plan

1. Description of knowledge or skill to be self-learned
2. Description of selected source of learning the knowledge or skill ie people, books, institutions, websites etc.
3. Description of method of self-directed learning viz formal learning or informal learning
4. Description of additional resources / learning resources required
5. Expected time required to learn along with justification

5. Indicators of performance

1. Quality of description of knowledge or skill to be self-learned (3 marks)
2. Appropriateness of selected source of knowledge or skill learning (3 marks)
3. Appropriateness of method of self-learning (1 mark)
4. Appropriateness of additional resources / learning resources required (1 mark)
5. Appropriateness of time required to learn (1 mark)