

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/2
Branch	Cement Technology (C01)			Semester	V
Course Code	501	Course Name	Unit Operation - II		
Course Outcome 1	Student will be able to explain the kiln operation in cement plant.			Teach Hrs	Marks
Learning Outcome 1	Student will be able to draw a layout of kiln section.			08	10
Contents	Introduction to Pyro processing, brief description of wet process, semi-wet process and dry process, advantages and disadvantages of dry process, layout diagram of kiln section starting from VRM to cooler outlet.				
Method of Assessment	Paper pen test				
Learning Outcome 2	Student will be able to describe the kilns and refractories.			10	10
Contents	Types of Kilns (dry process), sizing of kiln, L/D ratio, inlet seal, raw meal preparation and different methods of feeding to kiln, effect of leakage on kiln operations, optimization of kiln output, factors affecting the kiln output. Refractories, types of refractories.				
Method of Assessment	Theory exam				
Learning Outcome 3	Student will be able to describe the preheaters and precalciner.			08	10
Contents	Types of preheaters, two stage, four stage, six stage preheaters, their advantages and disadvantages, selection of preheaters, calciner, separate line calciner (SLC), in-line calciner (ILC), draw material and air flow diagram in kiln section with process parameters.				
Method of Assessment	Theory exam				
Course Outcome 2	Student will be able to explain the cooling of clinker and waste heat recovery system.			Teach Hrs	Marks
Learning Outcome 1	Student will be able to explain the cooling of clinker.			08	10
Contents	Different types of cooler used their operation and control, grate coolers, C.F.G coolers, cooling efficiency, air requirements for cooling operation.				
Method of Assessment	Theory exam				
Learning Outcome 2	Student will be able to explain the clinker conveying and waste heat recovery system.			08	10
Contents	Hammer mills, drag chains, different methods of clinker cooling and their advantages, methods of clinker storage, silos, gantry, waste heat recovery system operation, advantages and disadvantages of WHRS.				
Method of Assessment	Quiz (Term work)				
Course Outcome 3	Student will be able to describe the fuel management.			Teach Hrs	Marks

Learning Outcome 1	Student will be able to describe the firing system used in cement plant.	08	10
Contents	Firing system – different types of firing system used in cement plant, indirect firing, direct firing, their advantage and disadvantages, types of burner, advantages of multichannel burner. Fuel mix (mixing different types of coal for desired NCV), usage of Pet-coke, alternative fuels.		
Method of Assessment	Theory exam		
Learning Outcome 2	Student will be able to prepare the fuel for kiln and precalciner.	08	10
Contents	Fuel Preparation: sampling of coal, crushing, grinding and storage of pulverized coal, residue and moisture determination and their control, conveying of pulverized coal to kiln and precalciner, generation and utilization of waste gases, removal of fine coal from dust- laden gases, different equipment used, cyclones, bag filters and ESPs.		
Method of Assessment	Theory exam		
Course Outcome 4	Student will be able to calculate the heat balance and process parameters of pyro processing.	Teach Hrs	Marks
Learning Outcome 1	Student will be able to calculate the heat balance of kiln.	08	10
Contents	Thermal heat calculation, heat balance of kiln, air balance of kilns, primary, secondary and tertiary air, optimization of kiln output, factors affecting the kiln output, calcinations and its control, process parameters like kiln torque, velocity, temperature, draft at various stages, flame characteristics.		
Method of Assessment	Theory exam		
Learning Outcome 2	Student will be able to measure the process parameters of pyro processing.	08	10
Contents	Process parameters like kiln torque, velocity, temperature, draft at various stages, flame characteristics, trouble shooting in kiln, cooler and preheaters.		
Method of Assessment	Theory exam		
Course Outcome 5	Student will be able to describe the cement grinding, packaging and dispatch.	Teach Hrs	Marks
Learning Outcome 1	Student will be able to draw a diagram of grinding circuit and explain it.	08	10
Contents	Types of mills, ball mill, V.R.M., roller press, and their working principles, optimization of grinding efficiency i.e. throughput (power consumption, blain and residue), selection of grinding media, its wear rate, control of specific-surface and setting time, different types of weigh feeders, equipments used to convey cement to silo, storage of cement in silos.		
Method of Assessment	Theory exam		
Learning Outcome 2	Student will be able to describe the packaging and dispatch.	08	10
Contents	Different types of packers and loaders (truck loading machines, wagon loading machines, bulk loading in wagons, trucks and ship), their operation and selections, methods of extraction from cement silos, Silo Aeration & Ventilation Methods, types of bags, HDPE, paper bags, polypropylene bag, loading of cement in wagons and trucks.		

	Historical evolution of manufacturing process and recent trends.
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
					P	0	4	5	0	1	1	1	
COURSE NAME	PRINTER'S COSTING & ESTIMATING												
CO Description	Student will be able to plan costing.												
LO Description	To describe cost, and its principles.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Definition of cost, price, and profit, classification of expenditures, control of expenditure.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	07	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Paper pen test, Assignment	Student will be asked to describe cost and its principles.	10	Test paper			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
		P	0	4	5	0	1	1	2	

COURSE NAME	PRINTER'S COSTING & ESTIMATING
CO Description	Student will be able to plan costing.
LO Description	To classify cost and elements of cost.

SCHEME OF STUDY

S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks
1	<p>Materials, their types, objectives of material control, inventory control. Labour, Direct and Indirect labour, factors for control of labour cost, ideal time cost and overtime methods of wages payments, job evaluation.</p> <p>Expenses, Direct expenses and indirect expenses, characteristics of direct expenses and control of direct expenses.</p> <p>Overhead's classification, fixed and variable factory or works overheads, departmentalization of factory overheads, apportionment, depreciation methods, office and administrative overheads, selling and distribution overheads, and other overheads.</p>	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
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1	Paper pen test	Student will be asked to classify cost and elements of cost.	10	Test 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
					P	0	4	5	0	1	2	1	
COURSE NAME	PRINTER'S COSTING & ESTIMATING												
CO Description	Student will be able to utilize terminology of cost accounting in printing industry.												
LO Description	To analyse methods of allocating fixed costs and overheads.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Methods of allocating fixed costs and overheads. Operating cost classification transport service, power electricity service, canteen service etc.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	07	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Paper pen test, Assignment	Student will be asked to describe methods of allocating fixed costs and overheads	10	Test paper			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
					P	0	4	5	0	1	2	2	
COURSE NAME	PRINTER'S COSTING & ESTIMATING												
CO Description	Student will be able to utilize terminology of cost accounting in printing industry.												
LO Description	To describe forecast of life of assets and depreciation.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Forecast of life of assets. Concepts of depreciation and its type.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	06	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
1	Paper pen test, Assignment	Student will be asked to describe forecast of life of assets and depreciation.	10	Test paper			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
					P	0	4	5	0	1	3	1	
COURSE NAME		PRINTER'S COSTING & ESTIMATING											
CO Description		Student will be able to analyse cost audit, budgetary control and material purchase procedure.											
LO Description		To describe cost audit and budgetary control.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Cost audits, meaning statutory cost audit, advantages. Budgetary control, meaning objective, advantages, requisites, limitations, classification of budget. Cost variations. Cost control and cost reduction. Productivity role of cost accounting in cost control. Capital budgeting.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Paper pen test	Student will be asked to describe cost audit and budgetary control.	10	Test 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
					P	0	4	5	0	1	3	2	
COURSE NAME		PRINTER'S COSTING & ESTIMATING											
CO Description		Student will be able to analyse cost audit, budgetary control and material purchase procedure.											
LO Description		To describe material purchase procedure & taxation.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Material purchase procedure - Quotation. Tender and types of tenders. Making & submitting formal quotation - Terms & conditions, disputes and resolving them. Cost variation/ quantity variation/ penalty clause, delayed payments, concept of bid, quotation. Various taxes like CGST, SGST excise, sales, VAT, service etc. Examples based on direct and indirect taxation.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Paper pen test	Student will be asked to describe material purchase procedure & taxation.	10	Test 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
					P	0	4	5	0	1	4	1	
COURSE NAME		PRINTER'S COSTING & ESTIMATING											
CO Description		Student will be able to apply principles of federation costing system.											
LO Description		To describe principles and stages involved in federation costing system.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Federation costing system. Principles. Stages of federation costing system. Foundation of costing system aims & object of costing system, types of costing system (time rate, work rate). Comparison fixed cost & variable cost, just in time cost, cost effectiveness, standard press routine.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Paper pen test	Student will be asked to describe principles and stages of federation costing system.	10	Test 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
					P	0	4	5	0	1	4	2	
COURSE NAME		PRINTER'S COSTING & ESTIMATING											
CO Description		Student will be able to apply principles of federation costing system.											
LO Description		To interpret the various forms and proformas in printing.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Daily docket, cost sheet, work instruction ticket and their importance in costing. Generating work order. Making work instruction ticket & job ticket, material requisition form, statement of expenses/ cost sheet making estimate form, invoicing: proforma & final, sales reporting etc.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Paper pen test	Student will be asked to classify various forms, proformas in printing.	10	Test 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
					P	0	4	5	0	1	5	1	
COURSE NAME	PRINTER'S COSTING & ESTIMATING												
CO Description	Student will be able to prepare estimate and plan estimation procedure.												
LO Description	To describe concept & method of estimation and its application.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks						
1	Definition and concept of estimation scopes advantages. Qualification of an estimator. Estimator's tools, working environment. Difference between estimate & cost. Functions advantages and objectives of cost accounting. elements of cost. Determining hourly costs: labour, machine, etc. Output costing or unit costing and cost sheet. Organisational structure of printing industry.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Paper pen test	Student will be asked to describe concept & method of estimation and its application.	10	Test 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
				P	0	4	5	0	1	5	2	
COURSE NAME		PRINTER'S COSTING & ESTIMATING										
CO Description		Student will be able to prepare estimate and plan estimation procedure.										
LO Description		To prepare estimate for printing materials.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Practical/Tut Hrs.	LRs Required	Remarks					
1	Estimating weight of paper, board, plastic films and other substrates used in printing. Wastage allowance for different types of substrates according to printing processes. Estimating weight of ink and coating solutions etc for printing. Estimating other direct and indirect material costs for pre-press, printing finishing, marketing and sales. Understanding sequence of operations & time required. Preparing estimates using computer software.	Traditional Lecture method + Handout + PPT	Teacher will explain the contents and provide handout to students. Teacher will conduct seminar/presentation to make students practice their knowledge.	10	-	Handout + PPT	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	Paper pen test	Student will be asked to prepare estimate for printing materials.	10	Test paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

