RGPV (I	DIPL BHO		ING)		CULUM FOR THE DURSE	FORMA	AT-3	Sheet No. 1/3
Branch			C	ement Technology	7	Semester		V
Course C	ode	50	4	Course Name	ENERGY MANA	AGEMENT	AND A	AUDIT
Course O	utcon	ne 1		nts will be able to u vation and Energy	nderstand the energy Management.		Teacl Hrs	n Marks
Learning	Outc	ome 1		nts will be able to u s conservation.	nderstand importance	of energy,	08	10
Contents			econo	my. Energy deman	al role of energy. Ener d and availability, Law , Conversion of one fo	v of conserva	ation of	Energy.
Method of Assessmen			Theor	y Exam				
Learning	Outc	ome 2			inderstand the concept of nanagement opportunities	0.	08	10
Contents			Manag Energy	ement and Energy N	Energy Management, G Ianagement Planning. Er gy. Economics of impler	nergy Manage	ement S	
Method of Assessmen			Theor	y exam				
Course O	utcon	ne 2		entional and non co	understand and analy onventional source of			
Learning	Outc	ome 1	Stude		inderstand and analys energy.	е	06	08
Contents				rentional and non connal, Hydro, Nuclear	onventional source of fission,	energy. Con	vention	nal -
Method of Assessmen				Paper Pe	en Test (Part of Progre	ssive Test I )	1	

Learning Outcome 2	Students will be able to understand and analyse non- conventional source of energy.	10	12
Contents	Non – conventional source of energy, Solar, Wind, Biomass, cells, Magneto Hydrodynamic (MHD) generator and Nuclear f Comparison, Advantages and Disadvantages		rgy, Fuel
Method of Assessment	Theory Exam		
Course Outcome 3	Quantify the energy conservation opportunities in different Thermal and Electrical System	Teach Hrs	Marks
Learning Outcome 1	Student will be able to find the energy conservation opportunities in different Thermal System of Cement Plant	12	12
Contents	Heat balance, kiln-refractory interface lowering losses, Concepts of pre-calcining Fuel consumption economy Firing arrangement and s Combustion losses. WHRS	-	-
Method of Assessment	Paper Pen Test (Part of Progressive Test II )		
Learning Outcome 2	Student will be able to find the energy conservation opportunities in different Electrical System used in Cement Plant	8	8
Contents	Energy Efficient Techniques in Different electrical equipments crushers, mills, kiln and fans, motors and drives, Commercial and d		
Method of Assessment	Theory exam		
Course Outcome 4	Student will be able to write report on Energy Audit.	Teach Hrs	Marks
Learning Outcome 1	Student will be able to understand Energy Audit report writing procedure.	10	10
Contents	Preparations and presentations of energy audit reports, Guideline energy audit report, data presentation in report, Report-writing F		-
Method of Assessment	Theory exam		

Learning Outcome 2	Student will be able to analyse Energy Saving Techniques in Energy Audit	8	10
Contents	Impact of renewable energy on energy audit recommendations. Audit and Monitoring Energy and Energy Savings.	l Instrumer	nts for
Method of Assessment	Assignment		
Course Outcome 5	Case-studies / Report studies of Energy Audits and energy cost optimization	Teach Hrs	Marks
Learning Outcome 1	Energy Audit Case Study -I	10	10
Contents	Case study of Small Scale Industry, Residential Building, Building,	Commer	tial
Method of Assessment	Theory exam		
Learning Outcome 2	Energy Audit Case Study -II	10	10
Contents	Case study of Medium Scale Industry, College Building, A	uditoriu	m
Method of Assessment	Case Study as part of Term Work		

RGI	PV (Diploma Wi	ng ) Bhopal		SCHEME FOR	R LEARNING OU	JTCOM	E	Bra	nch Co	ode	Сог	ırse C	ode	CO Cod e	LO Cod e	Format No. <b>4</b>
								С	0	1	5	0	4	1	1	- 10.4
COU	URSE NAME	Energy Manager	ment an	nd Audit												
CO	Description	Students will be	e able to	understand the	e energy conserv	ation ar	nd Ene	ergy	Manag	gemer	nt.					
LO	Description	Students will be	e able to	understand im	portance of energy	gy, and	its Co	nserv	vation.	•						
					SCHEME OF	STUDY	7									
S. No	Learning Cont	tent	Teac Lear	hing – ning Method	Description of Process	T-L	Teac Hrs.		Pract. Hrs.	/Tut	LRs	Requi	ired		Ren	narks
1	of energy. En growing econo demand and av of conservatio Different fo	omy. Energy vailability, Law n of Energy. rm of Energy of one form o	class meth Data video , tutor	room lecture od, Handout, Collection, display, als teacher. Data collection from internet, Student will prepare Power Point Presentation on current scenario.												
				S	CHEME OF ASS	SESSMI	ENT									
S. No	Method of Ass	essment	Descrip	tion of Assessm	ient	Maxin Marks			Resou	rces F	Requir	ed				xternal ternal
1	Theory Exam			will be asked to explain the s as per learning content. 10 Question paper + Rating scale Extended								xternal				
	1		ADDIT	IONAL INSTR	UCTIONS FOR	THE H	OD/ F.	ACU	LTY (	IF AN	TY)					
				Par	t of end semeste	r theor	y exar	n								

ption Students v		nd Audit o understand the o to understand the	energy conserva	tion and	C	0	1	5	0	4	1		No. 4
ptionStudents vtionTo enable	s will be able to	o understand the	energy conserva	tion and							1	2	
tion To enable			energy conserva	tion and									
	le the students	to understand the		ulon und	Energy	Manage	ement.						
ning Content			concept of ener	rgy man	agement	and ene	ergy n	nanage	ment (	oppo	rtunitie	s	
ning Content			SCHEME OF	STUDY	7								
-		nching – arning Method	Description o Process	f T-L	Teach Hrs.	Pract. /Tut H		LRs ]	Requir	red		Rem	arks
ition and Objective y Management, Ge ples of Energy gement and Energy gement Planning. E gement Skills, Ener gement Strategy. omics of implement ergy optimization pr	General class met gy vide Energy tuto hergy ntation	eractive ssroom lecture hod, Handout, eo display, orials	Students will through disc on content pro by teacher. collection internet, S will prepare Point Preser on given topic.	ussion ovided Data from tudent Power ntation	8	0		Text Paper point Video		n, resen	Nil		
		SC	HEME OF ASS	SESSMI	ENT								
od of Assessment	t Descr	iption of Assessn	nent	Maxin Marks		Resou	rces F	Requir	ed			Exte Inter	
y Exam			1	10		Questi	on paj	per + F	Rating	scale	5	Exte	rnal
		im Studen conce	Student will be asked concepts as per learning	Student will be asked to explain the concepts as per learning content.	Assessment Description of Assessment Marks Marks Student will be asked to explain the 10	Assessment Description of Assessment Marks Student will be asked to explain the 10	Assessment Description of Assessment Marks Resou	Assessment Description of Assessment Marks Resources F Student will be asked to explain the 10 Ouestion part	Assessment Description of Assessment Marks Resources Require Student will be asked to explain the 10 Ouestion paper + R	Assessment Description of Assessment Marks Resources Required	Assessment Description of Assessment Marks Resources Required	AssessmentDescription of AssessmentMarksResources RequiredumStudent will be asked to explain the concepts as per learning content.10Question paper + Rating scale	Assessment Description of Assessment Marks Resources Required Inter Student will be asked to explain the 10 Ouestion paper   Pating scale External

DOI							Bran	ich Co	de	Cou	rse Code		CO Code	LO Code	Format
KGI	PV (Diplon	na Wing) Bho	pal	SCHEME FOI	R LEARNING OU	UTCOME	С	0	1	5	0	4	2	1	No. 4
COU	RSE NAME	Energy Manage	ement an	d Audit			I		I		_				
COD	Description	Students will be	e able to	understand and	analyse convention	onal and no	on conv	ventio	onal so	urce o	of ener	gy.			
LO D	escription	Students will be	e able to	understand and	analyse convention	onal source	e of er	nergy	/.						
					SCHEME OF	STUDY									
S. No.	Learning	Content	Teachi Learni	ing – ing Method	Description Process	of T-L	Teacl Hrs.	n //	Pract. Tut Irs.	LR	s Requ	iireo	d	Ren	narks
1	Conventiona conventiona energy. C Thermal, H fission ,.	l source of	teachin	stration, quiz,	handouts to Teacher will	provide students. conduct quiz to practice	06			Pow pres	d out/	lab 1	charts, manual, point Video	Nil	
	1		1	SC	HEME OF AS		NT							1	
S. No.	Method of	Assessment	Desc	ription of Asso	essment	Maximu Marks	ım	Res	ources	s Req	uired			Exte Inte	ernal rnal
1	Paper Pen T	est		learning conte	ked to explain nt on specified	08		Que	stion pa	aper +	Rating	g sca	le	Inter	nal
		AD	DITIO	NAL INSTRU	CTIONS FOR	THE HO	D/ FA	CU	LTY (	IF AN	NY)				
					(Part of Progressi	ive Test I)	)								

Dat								Bran	ch Code		Cou	ırse Cod	e	CO Code	LO Code	Forma	t
RGI	PV (Diploma W	(ing ) Bhopal		SCHEME FOI	R LEARNING O	UTCOM	IE	С	0	2	5	0	4	2	2	No. 4	I
CO	URSE NAME	Energy Manag	gement ar	nd Audit			I		_		I	I			1	1	
СО	Description	Students will	be able to	understand and	l analyse conven	tional ar	nd nor	n con	ventio	nal so	ource	of e	energy	•			
LO	Description	Students will	be able to	understand and	l analyse non-coi	nventior	nal sou	ırce	of en	ergy.			Code       Code         0       4       2         f       energy.       and the second sec				
		·			SCHEME O	F STUI	DY										
S. N o.	Learning C	ontent	Teachi Learni	ng – ng Method	Description o Process	of T-L	Teac h Hrs.		Pract /Tut Hrs.	•	LR	s Rec	quire	d	Rer	narks	
1	Non – conver of energy, So Biomass, wa Fuel cells, M Hydrodynam generator and fusion. Comp Advantages a Disadvantage	ve energy, agneto ic (MHD) l Nuclear parison, and	lecture method video tutorials Assignr	display,	Students will the processes the the discussion the teacher content provid teacher. Field	nrough with on led by	10		0		Tex Pap poin Vid	er H nt	Pen, prese				
				SC	CHEME OF AS	SSESS	MEN	T			1						
S. N o.	Method of A	Assessment	Desci	ription of Asse	essment	Maxii Mark			Resou	irces	Req	luireo	đ			ernal ernal	/
1	Theory Exan	1		nt will be asked pts as per learni	d to explain the ng content.	12			Test pa	aper -	+ rati	ng sca	ale		Exte	ernal	
		Al	DDITIO	NAL INSTRU	UCTIONS FOR	R THE	HOL	<b>)/ F</b>	ACUL	LTY	(IF A	ANY)	)				
				Part of	end semester t	heory o	exam	inat	ion								

Dat							<i>c</i> = 1	Brar	nch Code		Cour	rse Co	de	CO Code	LO Code	Format
RGI	PV (Diploma W	ing ) Bhopal		SCHEME FOI	R LEARNING O	UTCOM	IE	С	0	1	5	0	4	3	1	No. 4
COU	URSE NAME	Energy Mana	gement ar	nd Audit											1	
CO	Description	Quantify the	energy co	nservation oppo	ortunities in diffe	rent The	ermal	and	l Electi	rical S	ystem	1				
LO	Description	Student will b	be able to	find the energy	conservation of	portuni	ties in	diff	erent 7	Therm	al Sy	stem	n of Ce	ement Pl	ant	
					SCHEME O	F STUI	DY									
S. N 0.	Learning Co	ontent	Teachi Learni	ng – ng Method	Description of Process	of T-L	Tea Hrs		Prac /Tut		LRs	s Re	quire	d	Re	marks
1	of pre-heatin calcining consumption Firing arran	interface es, Concepts ng and pre- Fuel economy gement and of burners,	lecture method video	ve classroom Handout, display, , Assignments	the processes through t, the discussion with y, the teacher on Paper Pen, Power point presentation, Video Lectures.											
			1	SC	HEME OF AS	SSESSI	MEN'	T								
S. N o.	Method of A	Assessment	Descr	iption of Asse	essment	Maxi Mark		l	Reso	urces	Req	uire	d			ternal ternal
1	Paper	Pen Test		lents will be asl learning conte manner	nt on specified		12		Qı	iestio	n pape	er + ]	Rating	scale		Internal
		AI	DITIO	NAL INSTRU	CTIONS FOR	R THE	HOD	) <b>F</b> A	ACUL	TY (	IF Al	NY)				
					(Part of Progress	sive Tes	tII)									

(Diploma Wi SE NAME escription scription	<b>Energy Mana</b> Quantify the	energy co	nd Audit	R LEARNING O	UTCON	1E –	С	0	1	5	0	4	3	2	No. 4
escription	Quantify the	energy co								-	U		U		
-															
scription	Student will		onservation opp	ortunities in diff	erent Th	nermal	and	d Electr	ical S	Syste	m				
		be able to	find the energ	y conservation o	pportun	ities in	n dif	fferent E	lectr	ical	Syste	em us	ed in Ce	ment	Plant
				SCHEME O	F STUD	Y									
Learning Co	ontent	Teachiı Learniı	ng – ng Method	Description o Process	of T-L	Teac h Hrs.		Pract. /Tut Hrs.		LRs	Req	uire	d	Rer	narks
echniques in lectrical equi ement plant, nills, kiln nd fans, r rives, Com	Different pments in a crushers, motors and mercial and	, ration, quiz,	the contents provide hando students. To will co assignments/ q	and uts to eacher onduct uiz to	08				Hand Powe prese	d out/ er entati	lab r		Nil		
		1	S	U	SSESS	MEN	T								
Aethod of A	ssessment	Descr	iption of Asso	essment			-	Resour	ces ]	Requ	uired	l			External / Interna
o.Image: Constraint of the second								Questio	n pap	ber +	Ratir	ng sca	le		External
	Al	DDITIO	NAL INSTR	UCTIONS FO	R THE	HOI	)/ F	ACUL	TY (	(IF A	ANY	)			
			Part of	end semester	theory	exam	inat	tion							
	echniques in ectrical equi ment plant, ills, kiln id fans, n ives, Com omestic light	Itethod of Assessment	hergy Efficient echniques in Different ectrical equipments in a ament plant, crushers, ills, kiln ad fans, motors and ives, Commercial and omestic lightingInteracti teaching demonst assignmIethod of AssessmentDescr given manne	hergy Efficient       Interactive classroom         echniques in Different       teaching,         ectrical equipments in a       demonstration, quiz,         ament plant, crushers,       assignments.         ills, kiln       and         id fans, motors and       and         ives, Commercial and       and         omestic lighting       Set         Iethod of Assessment       Description of Assessment         heory Exam       Students will be asl         given learning contermanner.       and         ADDITIONAL INSTRUMENT       ADDITIONAL INSTRUMENT	hergy Efficient       Interactive classroom       Teacher will e         hergy Efficient       Interactive classroom       teaching,       the contents         hergy Efficient       Interactive classroom       teaching,       the contents         hergy Efficient       demonstration, quiz,       assignments.       Teacher will e         hergy Efficient       demonstration, quiz,       assignments.       Teacher will e         hergy Efficient       demonstration, quiz,       assignments.       students.       To assignments.         hergy Efficient       assignments.       will       contents       provide hando         hergy Efficient       assignments.       will       contents       provide hando         hergy Efficient       and       students.       To assignments.       finale         hergy Efficient       and       finale       students.       finale         hergy Efficient       and       finale       finale       finale         hergy Efficient       and       finale       finale       finale         hergy Efficient       and       finale       finale       finale         hergy Efficient       finale       finale       finale       finale         hergy Efficient <td< td=""><td>hergy Efficient       Interactive classroom       Teacher will explain         hergy Efficient       Interactive classroom       teaching,         hergy Efficient       Interactive classroom       teaching,         hergy Efficient       Interactive classroom       teacher will explain         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain         ills, kiln       demonstration, quiz,       assignments.       Teacher will explain         id fans, motors and       assignments.       will       conduct         ives, Commercial and       and       procession       make       students         practice       their       knowledge.       their         knowledge.       Schemet OF Assess       Maxin         Hethod of Assessment       Description of Assessment       Maxin         heory Exam       Students will be asked to explain       08         ADDITIONAL INSTRUCTIONS FOR THE       ADDITIONAL INSTRUCTIONS FOR THE</td><td>Interactive classroom teaching, demonstration, quiz, assignments.Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz to make students practice their knowledge.08Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz to make students practice their knowledge.08Teacher will explain the contents and provide handouts to students. 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Teacher will conduct       08         will conduct       assignments/ quiz to       make students       students       10         practice       their       their       10       10         will conduct       assignments/ quiz to       make students       10       10         practice       their       knowledge.       10       10       10         SCHEME OF ASSESSMENT         Iethod of Assessment       Description of Assessment       Maximum       Resour         neory Exam       Students will be asked to explain       08       Question</td><td>Interactive classroom       Teacher will explain       08         hergy Efficient       Interactive classroom       Teacher will explain       08         hergy Efficient       Interactive classroom       the contents and       08         hergy Efficient       demonstration, quiz,       assignments.       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Feacher       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher will conduct       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher       08       Interactive classroom         hites, Commercial and       mestic lighting       Description of Assessment       Maximum       Maximum       Resources         Itethod of Assessment       Description of Assessment       Maximum       08       Question par         heory Exam       Students will be asked to explain       08       Q</td><td>Interactive classroom       Teacher will explain       O8       Text         hergy Efficient       Interactive classroom       Teacher will explain       08       Text         hergy Efficient       Interactive classroom       Teacher will explain       08       Text         hergy Efficient       demonstration, quiz,       provide handouts to       08       Text         hergy Efficient       demonstration, quiz,       assignments.       students.       Teacher       08       Text         hergy Efficient       demonstration, quiz,       assignments.       students.       Teacher       08       Text         hergy Efficient       demonstration, quiz,       assignments.       will       conduct       assignments.       Pow         hergy Efficient       assignments.       will       conduct       assignments.       Lect         will conduct       assignments/       quiz to       make       students       Lect         howestic lighting       bescription of Assessment       Maximum       Maximum       Resources Request         lethod of Assessment       Students will be asked to explain       08       Question paper +         heory Exam       Students will be asked to explain       08       Question paper +   <td>Interactive classroom       Teacher will explain       08       Text boom         bergy Efficient       Interactive classroom       Teacher will explain       08       Hrs.       Text boom         bergy Efficient       Interactive classroom       Teacher will explain       08       Hand out/         bectrical equipments in a       ment plant, crushers,       assignments.       Teacher will explain       08       Hand out/         assignments.       students.       Teacher will conduct       assignments/ quiz to       make students       presentation         will conduct       assignments/ quiz to       make students       make students       presentation         prescription of Assessment       Description of Assessment       Maximum       Resources Required         heory Exam       Students will be asked to explain       08       Question paper + Ratin</td><td>Interactive classroom       Teacher will explain       Hrs.       Hrs.         hergy Efficient       Interactive classroom       Teacher will explain       08       Text book,         hergy efficient       Interactive classroom       Teacher will explain       08       Hrs.       Text book,         hergy efficient       Interactive classroom       teaching,       provide handouts to       08       Text book,         hergy efficient       assignments.       provide handouts to       students. Teacher       Power       Power         will       conduct       assignments/ quiz to       make students       practice       their       Lectures.         will conduct       make students       practice       their       Resources Required         Itethod of Assessment       Description of Assessment       Maximum       Resources Required         heory Exam       Students will be asked to explain       08       Question paper + Rating sca         heory Exam       Students number.       on specified       08       Question paper + Rating sca</td><td>Interactive classroom teaching, demonstration, quiz, assignments.Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz to make students practice their knowledge.O8Text book, charts, Hand out/ lab manual, Power point presentation, Video Lectures.Ethod of AssessmentDescription of AssessmentMaximum MarksResources RequiredMaximum MarksQuestion paper + Rating scaleabultItoNAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</td><td>Interactive classroom cectniques in Different ectniques in Different ectnique quipments in a mem plant, crushers, ills, kiln d fans, motors and ives, Commercial and mestic lightingInteractive classroom teaching, quiz, assignments.Teacher will explain neovide handouts to students. Teacher will conduct assignments/ quiz to make students practice their knowledge.O8Text book, charts, Hand out/lab manual, Power point presentation, Video Lectures.Nil teacher point presentation, Video Lectures.Nil teacher will conduct assignments/ quiz to make students practice their knowledge.Maximum MarksText book, charts, teacher power point presentation, Video Lectures.Nil teacher power point make MarksIdendo of AssessmentDescription of AssessmentMaximum MarksResources Requiredheory ExamStudents will be asked to explain manner.08&lt;</td></td></td<>	hergy Efficient       Interactive classroom       Teacher will explain         hergy Efficient       Interactive classroom       teaching,         hergy Efficient       Interactive classroom       teaching,         hergy Efficient       Interactive classroom       teacher will explain         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain         ills, kiln       demonstration, quiz,       assignments.       Teacher will explain         id fans, motors and       assignments.       will       conduct         ives, Commercial and       and       procession       make       students         practice       their       knowledge.       their         knowledge.       Schemet OF Assess       Maxin         Hethod of Assessment       Description of Assessment       Maxin         heory Exam       Students will be asked to explain       08         ADDITIONAL INSTRUCTIONS FOR THE       ADDITIONAL INSTRUCTIONS FOR THE	Interactive classroom teaching, demonstration, quiz, assignments.Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz to make students practice their knowledge.08Teacher will explain the contents and provide handouts to students. 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Teacher will conduct       08         will conduct       assignments/ quiz to       make students       students       10         practice       their       their       10       10         will conduct       assignments/ quiz to       make students       10       10         practice       their       knowledge.       10       10       10         SCHEME OF ASSESSMENT         Iethod of Assessment       Description of Assessment       Maximum       Resour         neory Exam       Students will be asked to explain       08       Question	Interactive classroom       Teacher will explain       08         hergy Efficient       Interactive classroom       Teacher will explain       08         hergy Efficient       Interactive classroom       the contents and       08         hergy Efficient       demonstration, quiz,       assignments.       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Feacher       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher will explain       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher will conduct       08       Interactive classroom         hergy Efficient       demonstration, quiz,       assignments.       Teacher       08       Interactive classroom         hites, Commercial and       mestic lighting       Description of Assessment       Maximum       Maximum       Resources         Itethod of Assessment       Description of Assessment       Maximum       08       Question par         heory Exam       Students will be asked to explain       08       Q	Interactive classroom       Teacher will explain       O8       Text         hergy Efficient       Interactive classroom       Teacher will explain       08       Text         hergy Efficient       Interactive classroom       Teacher will explain       08       Text         hergy Efficient       demonstration, quiz,       provide handouts to       08       Text         hergy Efficient       demonstration, quiz,       assignments.       students.       Teacher       08       Text         hergy Efficient       demonstration, quiz,       assignments.       students.       Teacher       08       Text         hergy Efficient       demonstration, quiz,       assignments.       will       conduct       assignments.       Pow         hergy Efficient       assignments.       will       conduct       assignments.       Lect         will conduct       assignments/       quiz to       make       students       Lect         howestic lighting       bescription of Assessment       Maximum       Maximum       Resources Request         lethod of Assessment       Students will be asked to explain       08       Question paper +         heory Exam       Students will be asked to explain       08       Question paper + <td>Interactive classroom       Teacher will explain       08       Text boom         bergy Efficient       Interactive classroom       Teacher will explain       08       Hrs.       Text boom         bergy Efficient       Interactive classroom       Teacher will explain       08       Hand out/         bectrical equipments in a       ment plant, crushers,       assignments.       Teacher will explain       08       Hand out/         assignments.       students.       Teacher will conduct       assignments/ quiz to       make students       presentation         will conduct       assignments/ quiz to       make students       make students       presentation         prescription of Assessment       Description of Assessment       Maximum       Resources Required         heory Exam       Students will be asked to explain       08       Question paper + Ratin</td> <td>Interactive classroom       Teacher will explain       Hrs.       Hrs.         hergy Efficient       Interactive classroom       Teacher will explain       08       Text book,         hergy efficient       Interactive classroom       Teacher will explain       08       Hrs.       Text book,         hergy efficient       Interactive classroom       teaching,       provide handouts to       08       Text book,         hergy efficient       assignments.       provide handouts to       students. Teacher       Power       Power         will       conduct       assignments/ quiz to       make students       practice       their       Lectures.         will conduct       make students       practice       their       Resources Required         Itethod of Assessment       Description of Assessment       Maximum       Resources Required         heory Exam       Students will be asked to explain       08       Question paper + Rating sca         heory Exam       Students number.       on specified       08       Question paper + Rating sca</td> <td>Interactive classroom teaching, demonstration, quiz, assignments.Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz to make students practice their knowledge.O8Text book, charts, Hand out/ lab manual, Power point presentation, Video Lectures.Ethod of AssessmentDescription of AssessmentMaximum MarksResources RequiredMaximum MarksQuestion paper + Rating scaleabultItoNAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</td> <td>Interactive classroom cectniques in Different ectniques in Different ectnique quipments in a mem plant, crushers, ills, kiln d fans, motors and ives, Commercial and mestic lightingInteractive classroom teaching, quiz, assignments.Teacher will explain neovide handouts to students. 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Teacher will explain       08       Hand out/         assignments.       students.       Teacher will conduct       assignments/ quiz to       make students       presentation         will conduct       assignments/ quiz to       make students       make students       presentation         prescription of Assessment       Description of Assessment       Maximum       Resources Required         heory Exam       Students will be asked to explain       08       Question paper + Ratin	Interactive classroom       Teacher will explain       Hrs.       Hrs.         hergy Efficient       Interactive classroom       Teacher will explain       08       Text book,         hergy efficient       Interactive classroom       Teacher will explain       08       Hrs.       Text book,         hergy efficient       Interactive classroom       teaching,       provide handouts to       08       Text book,         hergy efficient       assignments.       provide handouts to       students. 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DO		) DI I				TOOL		anch Co	de		Cours	se Code	9	CO Code	LO Code	Format
RGI	PV (Diploma Wi	ng ) Bhopal		SCHEME FOR	R LEARNING OU	JTCOM	E C	0		1	5	0	4	4	1	No. 4
COI	URSE NAME	Energy Mana	agement a	nd Audit			I	I								_
CO	Description	Student will	be able to	write report on	Energy Audit.											
LO	Description	Student will	be able to	o understand Ene	ergy Audit report	writing	procedu	re.								
					SCHEME OF	F STUD	Y									
S. N 0.	Learning Co	ontent	Teachi Learni	ng – ng Method	Description o Process	f T-L	Teach Hrs.	Pra /Tu		s.	LRs	Req	uire	d	Rei	narks
1	Preparations presentations audit reports for writing report, data pr report, R Recommendat	energy audit resentation in Report-writing	Interacti lecture Handou display, Assignm	tutorials,	Teacher will de the procedur Energy audit preparation. students will through practice	e of report The learn	10	0			Text Hand point Video	lοι	prese	charts Power ntation	ſ	
			1	SC	CHEME OF AS	SSESSI	MENT			· ·						
S. N 0.	Method of A	ssessment	Desci	iption of Asse	ssment	Maxi Mark		Res	our	ces ]	Requ	ired	l		-	ernal ernal
1	Theory exam			learning conten	ked to explain nt on specified	10		Que	stior	n pap	video Lectures. Required		le	Exte	ernal	
		Al	DDITIO		JCTIONS FOR				JLT	Y (I	FAN	NY)				
				Part of	end semester t	heory e	examina	tion								

DOD		·						Bran	ich Code		Cou	urse Coo	le	CO Code	LO Code	Format
KGP	V (Diploma W	ing ) Bhopai		SCHEME FO	R LEARNING O	UICOM	LE	С	0	1	5	0	4	4	2	No. 4
COU	RSE NAME	Energy Mana	ngement a	nd Audit						I		I				
CO D	escription	Student will	be able t	o write report o	on Energy Audit.											
LO D	escription	Student will	be able to	analyse Energ	gy Saving Techni	iques in l	Energy	Au	dit							
		1			SCHEME (	OF STUD	Y									
S. No.	Learning (	Content	Teachi Learni	ng – ng Method	Description Process	of T-L	Teac Hrs.		Prac /Tut		LR	ls Re	quire	d	Rei	narks
1	Impact of renewable energy on energy audit recommendations.Interactive classroom method, Handout, tiectureStudents will learn the processes through the discussion with the discussion with the teacher on content provided by teacher and Energy Savings.Text book, charts, Paper Pen, Power point presentation, Video Lectures.NImpact of renewable recommendations.Handout, display, tutorials, and random quiz taken by them.80Text book, charts, Paper Pen, Power point presentation, Video Lectures.NInstruments for Audit and Energy Savings.display, tutorials, 								r							
				S	CHEME OF A	SSESS	MEN	Г								
S. No.	Method of	<sup>2</sup> Assessment	Desc	ription of Ass	essment	Maxin Marks			Reso	urces	s Req	quire	ł			ernal ernal
1	Theory examples and the second	m		learning conte	ked to explain nt on specified	10			Quest	ion pa	aper -	+ Rati	ng sca	le	Exte	ernal
		A	DDITI(	ONAL INSTR	UCTIONS FO	R THE	HOD	/ <b>F</b>	ACU	LTY	(IF A	ANY)	)			
				Part of	f end semester	theory	exami	nat	ion							

DODI						TCOM		srand	ch Code		Cour	rse Co	de	CO Code	LO Code	Format
RGPV	(Diploma W	/ing ) Bhopal		SCHEME FOR	R LEARNING OU	JTCOM	E	2	0	1	Course Code     Code       5     0     4     5         LRs Required       Text book, charts       Paper Pen, Powe       point presentation       Video       Lectures       Internet         Required   aper + Rating scale	1	No. 4			
COUR	RSE NAME	Energy Mana	igement a	nd Audit			'							<u>'</u>		
CO De	escription	Case-studies /	Report st	udies of Energy A	udits and energy o	cost opti	mization									
LO De	escription	Energy Audi	t Case Stu	udy -I												
		1			SCHEME OF	STUD	Y									
S. No.	Learning	Content	Teachi Learni	ng – ng Method	Description o Process	f T-L	Teach Hrs.		Pract /Tut I		LRs	s Re	quire	d	Rei	marks
1	Case study Scale Residential Commertia	Industry, Building,	lecture Handou display,	t, classroom method, t, video Actual Field illection,	Students will the processes o Study by actua collection analysis of Suggestions improvement.	f Case	10		0		Pape poin Vide	er t eo	Pen, prese	Powe entation	r I,	
	1			SC	CHEME OF AS	SESSI	MENT									
S. No.	Method Assessme	oi	f Descr	iption of Asse	ssment	Maxii Mark			Resou	irces	Requ	uire	d			ternal / ernal
1	Theory exa	ım		on any one	d to write case case with data	10			Questi	on pa	iper +	xt book, charts per Pen, Power int presentation deo Lectures ernet <b>quired</b> + Rating scale	Ext	ernal		
		Al	DDITIO	NAL INSTRU	JCTIONS FOR	R THE	HOD/	FA	CUL	TY (	IF A	NY)	)			
				Part of	end semester t	heory e	examin	ati	on							

RGPV (Diploma Wing ) Bhopal COURSE NAME Energy Manageme				SCHEME FOR LEARNING OUTCOME				Branch Code			Course Code			LO Code	Format	
							E C	0	1	5	0	4	Code 5	2	No. 4	
				ement and Audit												
-			s / Repor	s / Report studies of Energy Audits and energy cost optimization												
			dit Case	dit Case Study -II												
					SCHEME O	F STUD	Y									
S. No	Learning Content		Teaching – Learning Method		Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.		LRs Required			Rei	Remarks		
1	Case study of Scale Industry Building, Audi	, College	lecture Handou display,	· 1			10	0		Tex Pap poin Vid Inte	er l nt	-	charts Powe entation ectures	r ,		
	'	· · ·		SC	CHEME OF A	SSESSI	MENT									
S. No	Method of As	ssessment	Description of Assessment			Maximum Marks		Resources F			Required				ernal ernal	
1	Assignments, Writing	Report	Student will be asked to submit assignment/ Case study Report / quiz on learning content			10		Observation / viva vice / Case stud report valuation / Rating scale				-	Internal			
		Al	DDITIC	ONAL INSTRU	JCTIONS FOI	R THE	HOD/ I	FACU	LTY	(IF A	NY)					
					Part of Ter	m worl	k									

## TEXT BOOKS AND REFERENCES

## 1. Energy Audit & Management

(Dr. Subhash Gadhave Anup Goel Siddu S. Laxmikant D. Jathar)

Publisher: Technical Publications ISBN: 9789333218696, 9333218696 Edition: 2nd, 2019 Pages: 200

## 2. Energy Management Conservation and Audits

By Anil Kumar, Om Prakash, Prashant Singh Chauhan, Samsher Gautam Copyright Year 2021 ISBN 9780367343835 Published July 29, 2020 by CRC Press 200 Pages 35 B/W Illustrations

## 3. Energy Management Audit And Conservation

( Barun Kumar De) Publisher: VRINDA PUBLICATIONS P LT-DELHI ISBN: 9788182813434, 8182813433