	•	IPLOM SHOPA		OBE CURRIC	FORMA	S	heet o.						
Branch			Mechanical Engineering Semester						VI				
Course (	Code			Course Name Power Plant Engineering									
Course	Outc	ome 1		Describe arrangement, operations and function of power plants.  Teach Hrs									
Learnin	g Out	come 1		Describe energy scenario, energy conversion in power plants of India.									
Co	ontent	S		Energy needs of India. Introduction to power plants & their importance, power plants concepts, types and energy conversion in each type									
	ethod o		Paper	pen test (Part of term wor	k- internal)								
Learnin	g Out	come 2	List fe	atures of National Grid.				2	05				
Co	ontents	8		scenario of India, Nation									
	ethod o sessme		Paper	pen test (Part of term wor	k- internal)								
Learnin	g Out	come 3		be arrangement, operatio nuclear power plants.	ns and funct	ions	of Hydro,	10	15				
Co	ontent	S	advant Diesel advant India Nuclea criteria disadv	power plant: General a rages and disadvantages, t power plant: General a rages and disadvantages, t ar power plant: General a for selection of installa rantages, technical data of	echnical data arrangement echnical data arrangement tion of nucle	a of h & i a of d t & i ear p	ydro power ts operatio iesel engine its operatio ower plant	plants in, classe power n, classe advant	n India, ification, plants in ification,				
	ethod o		Theor	lear waste	nucicai pov	wei p	iding in in	lia, safe	_				
Ass Learnin	sessment ag Outo	nt	I IICOI	lear waste y Exam ( Part of end seme				lia, safe	_				
	4 4	come 4	List s	y Exam ( Part of end seme afety measures for hyd	ester theory e	exam-	- external)	lia, safe	_				
C	ontent		List s	y Exam ( Part of end seme afety measures for hyd	ro, diesel,	exam-	ear power	3	disposal				
Me	ontents ethod o sessme	s of	List s plants.	y Exam ( Part of end seme afety measures for hyd	ester theory e	exam- nucle	external) ear power	3	disposal				
Me	ethod o	s of nt	List s plants. Safety Labora	y Exam ( Part of end seme afety measures for hyd measures manual for hyd	ester theory e ro, diesel, i ro, diesel, nu Part of lab w	exam- nucle nuclear	external) car power power pla internal)	3	disposal				
Me Ass	ethod of sessments	ome 2	List s plants. Safety Labors  Expla power	y Exam ( Part of end seme afety measures for hyd measures manual for hyd atory test by observation ( in operation and control	ro, diesel, nu Part of lab w	nuclear rork-	ear power pla internal)	3 nts.	disposal 05				
Mo Ass Course Learnin	ethod of sessments	ome 2	List s plants. Safety Labora  Expla power Identifi diagra	afety measures for hydratory test by observation ( in operation and control plant elements. Ey components of a steam m or model. natic diagram of modern the	ro, diesel, nu Part of lab w procedure of	exam- nuclear uclear ork- of ste	ear power pla internal)	3 nts. Teach Hrs	disposal  05  Marks 05				
Me Ass Course Learnin Co	ethod of sessment Outcomes Out	ome 2 come 1	List s plants. Safety Labora  Expla power Identif diagra Schem heater	afety measures for hydratory test by observation ( in operation and control plant elements. Ey components of a steam m or model. natic diagram of modern the	ester theory e ro, diesel, nu Part of lab w procedure of power plant hermal powe	nuclear nuclear vork- of ste	external) car power pla internal) cam schematic nt. Super ho	3 nts. Teach Hrs	disposal  05  Marks 05				

Contents	Fuel handling systems-methods of coal handling like pulver	ized fuel	system,
Method of	etc. Concept of Electro-Static Precipitators (ESP).		
Assessment	Theory Exam ( Part of end semester theory exam- external)		
Learning Outcome 3	Explain working of temperature, feed water control	6	10
Learning Outcome 3	systems of a steam power plant.		
Contents	Effect of load variation in steam power plant. Area and ce system of power plants. Basic elements and requirements system of power plant. Instrumentations used in modern pow	of good	control
Method of	Theory Exam ( Part of end semester theory exam- external)		
Assessment			
<b>Learning Outcome 4</b>	Prepare a temperature chart.	3	10
Contents	Need of record keeping, temperature recording at po temperature recording charts.	wer pla	nt area,
Method of	Paper pen test( Part of progressive test 1- internal)		
Assessment			
Course Outcome 3	Explain construction and working of Gas turbine power plants.	Teach Hrs	Marks
Learning Outcome 1	Draw a labeled schematic diagram of a gas turbine power plant.	4	10
Contents	Introduction to gas turbine power plant. Concept of Arrangement of open and close cycle with constant pres	•	•
	power plant.	sare gas	turome
Method of	Paper pen test (Part of progressive test 2- internal)		
Assessment	Taper pen test (Fait of progressive test 2- internal)		
Learning Outcome 2	Identify components of a gas turbine power plant in a schematic diagram or model.	10	8
Contents	Components of gas turbine power plant. Essential auxiliarie	es of gas	turbine
	power plant. Methods to improve the thermal efficiency of cycle constant pressure gas turbine power plant (No derivation)	of a simp	
Method of	Practical Exam (End semester practical examination- ex		
Assessment	Tractical Exam (End semester practical examination- ex	terriar)	
<b>Learning Outcome 3</b>	Solve a given numerical problem on thermal efficiency of a gas turbine power plant.	7	15
Contents	Calculation of thermal efficiency of gas turbine power plan	t. Advar	tages of
	gas turbine power plant over others.		
Method of	Theory Exam ( Part of end semester theory exam- external)		
Assessment			
Course Outcome 4	Explain construction and working of renewable energy	Teach	Marks
Course Outcome 4	power plants.	Hrs	
Learning Outcome 1	Explain construction and working of Hydro Electric Power	5	10
	plants.		
Contents	Hydro Electric Power Plants – Classification, Typical Layor components including Turbines	at and as	ssociated
Method of Assessment	Theory Exam ( Part of end semester theory exam- external)		
Learning Outcome 2	Identify components of Wind, Tidal, Solar power plant in a schematic diagram or model.	5	8
Contents	Principle, Construction and working of Wind, Tidal, Solar l	Photo Vo	oltaic

	(SPV), Solar Thermal power plants		
Method of Assessment	Practical Exam (Part of end semester practical examinat	ion- ext	ernal)
Learning Outcome 3	Identify components of Geo Thermal, Biogas, Fuel Cell plant in a schematic diagram or model.	9	8
Contents	Principle, Construction and working of Geo Thermal, B power systems.	iogas, F	uel Cell
Method of Assessment	Practical Exam (End semester practical examination- ex	ternal)	
<b>Learning Outcome 4</b>	Select a suitable renewable energy power plant on the basis of available resources.	6	10
Contents	Case studies of Hydro, Wind, Tidal, Solar Photo Volta Thermal, Biogas, Fuel Cell power systems.	ic (SPV	), Solar
Method of Assessment	Laboratory test by observation (Part of lab work- internal)		
<b>Course Outcome 5</b>	Explain economic considerations, pollution controls in	Teach	Marks
	power plants.	Hrs	
Learning Outcome 1			10
Learning Outcome 1  Contents	<ul><li>power plants.</li><li>Calculate performance parameters of a power plant under</li></ul>	Hrs 12 Performanparison	of site
	<ul> <li>power plants.</li> <li>Calculate performance parameters of a power plant under given condition.</li> <li>Cost of electrical energy. Selection of type of generation. load deviation of power plants.</li> <li>Power tariff types, Load distribution parameters, Compared to the condition of type of generation.</li> </ul>	Hrs 12 Performanparison	of site
Contents  Method of	Calculate performance parameters of a power plant under given condition.  Cost of electrical energy. Selection of type of generation. load deviation of power plants.  Power tariff types, Load distribution parameters, Comselection criteria, Capital & Operating Cost of different power theory Exam (Part of end semester theory exam-external)  Practice pollution control alternatives, waste disposal options for power plants.	Hrs 12 Performan parison er plants.	of site
Contents  Method of Assessment	Calculate performance parameters of a power plant under given condition.  Cost of electrical energy. Selection of type of generation. load deviation of power plants.  Power tariff types, Load distribution parameters, Comselection criteria, Capital & Operating Cost of different power theory Exam (Part of end semester theory exam-external)  Practice pollution control alternatives, waste disposal	Hrs 12 Performan parison er plants.	of site

# SCHEME FOR LEARNING OUTCOME

B	Branch Cod		ode Course Code		Code Code		4
M	0	2			1	1	Format No. 4

<b>COURSE NAME</b>	Power plant Engineering					
<b>CO Description</b>	Describe arrangement, operations and function of power plants.					
LO Description	Describe energy scenario, energy conversion in power plants of India.					

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Energy needs of India. Introduction to power plants & their importance, power plants concepts, types and energy conversion in each type.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	4	0	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### 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 energy scenario/energy conversion in power plants of India.	05	Test Paper + Rating Scale	Internal

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

#### Part of Term work

# SCHEME FOR LEARNING OUTCOME

B	Branch Code		Course Code		CO Code	LO Code	
M	0	2			1	2	Format No. 4

1711	opui	EDITION OF COME							
COURSE NAME   Power plant Engineering									
<b>CO Description</b>	Describe arrangement	operations and function of power plant	3.						
LO Description	List features of National	Grid.							

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Power scenario of India, National Grids.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	2	0	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### 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 explain National Grids.	5	Test Paper + Rating Scale	Internal

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

#### Part of Term work

# SCHEME FOR LEARNING OUTCOME

Bı	Branch Code		Course Code		CO Code	LO Code	4
M	0	2			1	3	Format No. 4

<b>COURSE NAME</b>	<b>Power plant Engineering</b>
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**CO Description** Describe arrangement, operations and function of power plants.

**LO Description** Describe arrangement, operations and functions of hydro, diesel, nuclear power plants.

#### SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T- L Process	Teac h Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Hydro power plant: General arrangement & its operation, classification, advantages and disadvantages, technical data of hydro power plants in India,  Diesel power plant: General arrangement & its operation, classification, advantages and disadvantages, technical data of diesel engine power plants in India,  Nuclear power plant: General arrangement & its operation, classification, criteria for selection of installation of nuclear power plant, advantages and disadvantages, technical data of nuclear power plants in India, safe disposal of nuclear waste.	Interactive Classroom teaching / Traditional Chalk- board teaching, quiz, assignments and Demonstration.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	06	04	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts, Models and Videos.	

#### **SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory Exam	Student will be asked to describe the arrangement/operations / functions of Hydro/ diesel / nuclear power plants.	15	Question Paper + Rating Scale	External

### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

# SCHEME FOR LEARNING OUTCOME

B	ranch Co	de	Co	ourse Co	de	CO Code	LO Code	
M	0	2				1	4	Format No. 4

	- I								
<b>COURSE NAME</b>	Power plant Enginee	ering							
<b>CO Description</b>	Describe arrangement	, operations	and function of	f power plants.					
LO Description	List safety measures for	hydro, diesel	, nuclear power	plants.					

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Safety measures manuals for Hydro, diesel, nuclear power plants.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	00	03	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Student will be asked to list down the safety measures for Hydro/diesel/ nuclear power plants.	05	Observation schedule/check-list /rating scales /rubrics	Internal

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

#### Part of Lab work

# SCHEME FOR LEARNING OUTCOME

В	ranch Co	de	Co	ourse Co	de	CO Code	LO Code	
M	0	2				2	1	Format No. 4

<b>COURSE NAME</b>	Power plant Engineering
<b>CO Description</b>	Explain operation and control procedure of steam power plant elements.
LO Description	Identify components of a steam power plant in a schematic diagram or model.

### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Schematic diagram of modern thermal power plant. Super heaters and air pre heaters.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments and Demonstration.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	02	04	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts, Models and Videos.	

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Student will be asked to identify components of a steam power plant in a schematic diagram or model.	05	Observation schedule/check-list /rating scales /rubrics	Internal

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

### Part of Lab work

R(	GPV (Dip	loma Wing	g)	SC	HEME FO	R		Branch	Code	C	ourse C	ode	CO Code	LO Code	4
	Bh	opal		LEARN	ING OUT	COME	$\mathbf{E} \mid \mathbf{M}$	1 0	2				2	2	Format No. 4
COUR	SE NAME	Power plant	Engine	ering											
CO De	scription	Explain oper	ration a	nd control pro	ocedure of steam	m power	plant	eleme	ents.						
LO Des	scription	Explain constru	uction ar	nd working of st	team power plant	elements	using n	eat sk	tches	•					
					SCHEME O	F STUD	PΥ								
S. No.	Learnin	g Content		aching — ing Method	Description o Process		Геасh Hrs.	Pr /Tut	act. Hrs.	L	Rs R	Requir	ed		Remarks
1	Fuel handling systems- methods of coal handling like pulverized fuel system, etc. Concept of Electro- Static Precipitators (ESP).		teaching Chalk-b	ve Classroom / Traditional pard teaching, ignments.			)6	00		Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.					
				S	<b>SCHEME OF A</b>	SSESSM	<b>MENT</b>								
S. No.	Method o	f Assessment	De	escription of A	Assessment	Maxin Mar			R	esour	ces R	equir	ed		External / Internal
1 Theory Exam const			ent will be ask truction and wo wer plant elemen sketche	nts using neat	10	)		Ques	tion Pa	per +	Rating	g Scale	;	External	

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

# SCHEME FOR LEARNING OUTCOME

Bı	ranch Co	de	Course Co	ode	CO Code	LO Code	4
M	0	2			2	3	Format No. 4

C	OURSE NAME	Power plant Engineering
C	O Description	Explain operation and control procedure of steam power plant elements.
L	O Description	Explain working of temperature, feed water control systems of a steam power plant.

#### **SCHEME OF STUDY**

S. No.	<b>Learning Content</b>	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Effect of load variation in steam power plant. Area and centralized control system of power plants. Basic elements and requirements of good control system of power plant. Instrumentations used in modern power plants.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	04	02	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal		
1	Theory exam	Student will be asked to describe working of temperature control systems /feed water control systems of a steam power plant.	10	Observation schedule/check-list /rating scales /rubrics	External		

### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma	Wing)
Bhopal	

Bı	ranch Co	de	Co	ourse Co	de	CO Code	LO Code	4
M	0	2				2	4	Format No. 4

COURSE NAME	Power Plant Engineering
<b>CO Description</b>	Explain operation and control procedure of steam power plant elements.
LO Description	Prepare a temperature chart.

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks		
1	Need of record keeping, temperature recording at power plant area, temperature recording charts.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	03	00	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.			

#### 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 a temperature chart.	10	Question Paper + Rating Scale	Internal	

### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

## Part of progressive test 1

<b>RGPV</b>	(Diploma	Wing)
	Bhopal	

Branch Code		de	Co	ourse Co	de	CO Code	LO Code		
M	0	2				3	1	Format No. 4	

								1	
<b>COURSE NAME</b>	<b>Power plant Enginee</b>	ring							
<b>CO Description</b>	Explain construction	and working of G	as turbine power pla	nts.					
LO Description	Draw a labeled schemat	ic diagram of a gas tu	irbine power plant.						

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Introduction to gas turbine power plant. Concept of Brayton cycle. Arrangement of open and close cycle with constant pressure gas turbine power plant.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	04	00	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### **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 draw a labeled schematic diagram of a gas turbine power plant.	10	Question Paper + Rating Scale	Internal

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

## Part of progressive test 2

RO	GPV (Dij	oloma Win	<b>ig</b> )	SC	HEME FO	R		Br	ranch Cod	e	C	ourse Co	ode	CO Code	LO Code	1
	Bhopal		LEARNING OUTCOME		$\mathbf{E}$	M	0	2				3	2	Format No. 4		
COUR	SE NAME	Power plant	Engineer	ring												
<b>CO Description</b> Explain construction and working of Gas to			of Gas turbine	power p	plants	S.										
LO Des	scription	Identify compo	nents of a	gas turbine po	wer plant in a sch	nematic di	iagram	or i	model.							
					SCHEME (	OF STUI	DY									
S. No.	Learnii	ng Content		aching – ing Method	Description of Process		Teacl Hrs.		Pract Tut H		L	Rs R	equir	ed		Remarks
1	power plant auxiliaries of power plant improve the efficiency o	of gas turbine  of Methods to thermal  f a simple open ont pressure gas	teaching Chalk-b	ve Classroom / Traditional oard teaching, ignments.	Students will I the processes through the discussion wit teacher on cor provided by te and random qual taken by them	th the ntent eacher uiz	04	0	06		Pen, Text	k boa Hanc book Video	louts, t, Cha	PPT,		
				S	SCHEME OF A	ASSESSI	MEN'	T								
S. No.	Method	of Assessment	De	Description of Assessment		Maxi Ma				Re	sour	ces R	equir	ed		External / Internal
1		atory test by servation	by Student will be asked to identify components of gas turbine power plant elements using neat sketches.		turbine power	8	3		Observation schedule/check-list /rating scales /rubrics		ating	External				
		A	ADDITIO	ONAL INSTR	RUCTIONS FO	R THE	HOD	) FA	ACUL	TY	(IF A	NY)				

End semester practical examination

<b>RGPV</b>	(Diploma	Wing)
	Bhonal	

	LO Code	CO Code	se Code	Co	de	anch Coo	Bı
Format N	3	3			2	0	M

**CO Description** Explain construction and working of Gas turbine power plants.

**LO Description** Solve a given numerical problem on thermal efficiency of a gas turbine power plant.

#### SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Calculation of thermal efficiency of gas turbine power plant. Advantages of gas turbine power plant over others.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	07	00	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory Exam	Student will be asked to solve a given numerical problem on thermal efficiency of a gas turbine power plant.	15	Question Paper + Rating Scale	External

#### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing )		g) SCI	SCHEME FOR			Course C	Code CO Code	LO Code		
Bhopal			LEARN	ING OUTCOM	$\mathbf{E} \mid M$	1 0 2		4	1	Format No. 4
COURSE NAME   Power plant Engineering										
CO Des	scription	Explain constru	ction and working of rene	ewable energy power pla	nts.					
LO Des	scription	Explain constru	ction and working of Hyd	lro Electric Power plants	•					
				SCHEME OF STU	JDY					
S. No.	Learnii	ng Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs R	Required		Remarks
		· ~								

SCHEME OF STOP							
S. No.	<b>Learning Content</b>	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Hydro Electric Power Plants – Classification, Typical Layout and associated components including Turbines	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments and Demonstration.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	05	00	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts, Models and Videos.	

### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory Exam	Student will be asked to describe construction, working of a given Hydro Electric Power plants.	10	Question Paper + Rating Scale	External

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

<b>RGPV</b>	(Diploma	Wing)
	Bhopal	

В	ranch Co	de	C	Course Code			LO Code				
M	0	2				4	2	Format No. 4			

	L .							
<b>COURSE NAME</b>	Power plant Engineering							
CO Description	Explain construction and working of renewable energy power plants.							
LO Description	Identify components of Wind, Tidal, Solar power plant in a schematic diag	gran	n or m	odel.				

### **SCHEME OF STUDY**

			D 0 = = = 0 = 0 = 0				
S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Principle, Construction and working of Wind, Tidal, Solar Photo Voltaic (SPV), Solar Thermal power plants	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments and Demonstration.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	01	04	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts, Models and Videos.	
				~~ ~~~			

#### **SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	<b>Description of Assessment</b>	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Student will be asked to identify components of Wind/Tidal/Solar Photo Voltaic (SPV)/Solar Thermal power plants	8	Observation schedule/check-list /rating scales /rubrics	External

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester practical examination

RGPV (Dip	oloma Wing)
Bh	opal
COLIDGE NAME	Down plant Engi

В	ranch Co	de	C	ourse Code Code Code		LO Code		
M	0	2				4	3	Format No. 4

	<b>A</b>								
<b>COURSE NAME</b>	Power plant Engineering								
CO Description	Explain construction and working of renewable energy power plants.								
LO Description	Identify components of Geo Thermal, Biogas, Fuel Cell plant in a scher	matic	diagrai	m or r	mode]	l.			

### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks					
1	Principle, Construction and working of Geo Thermal, Biogas, Fuel Cell power systems.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	02	07	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.						
				~~ ~~~								

#### **SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Student will be asked to identify components of Geo Thermal, Biogas and Fuel Cell power systems.	8	Observation schedule/check-list /rating scales /rubrics	External

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester practical examination

RGPV (Diploma Wi		oloma Win	<b>g</b> )	SC	HEME FO	R		Branch Code			Course Code			CO Code	LO Code	1
	Bh	opal		LEARN	ING OUT	COM	$\mathbf{E}$	M	0	2				4	4	Format No. 4
COUR	SE NAME	Power plant I	Engineer	ring												
CO Des	scription	Explain constru	ction and	working of ren	ewable energy po	wer plar	nts.									
LO Des	scription	Select a suitable	e renewat	ole energy powe	r plant on the basi	is of ava	ilable	reso	urces.							
	SCHEME OF STUDY															
S. No. Learning Content Teaching — Learning Method Process Process LRs Required Recognition of T-L Process LRs Required Recognition of T-L Process Recogniti								Remarks								
1	Case studies of Hydro, Intera Wind, Tidal, Solar Photo Voltaic (SPV), Solar Chalk			ve Classroom / Traditional oard teaching, signments.	Students will let the processes through the discussion with teacher on comprovided by teand random quaken by them.	n the tent acher iiz	00		06		Pen,	Han bool	k, Cha	PPT,		
					SCHEME OF A											
S. No.	Method	of Assessment	De	escription of A	Assessment		imum irks			Re	esour	ces R	Requir	ed		External / Internal
1 Laboratory test by suitable renev					ked to select a energy power given resources.			Obser	rvatio		edule/ es /ru		-list /ra	ating	Internal	
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)															
					Part of La	ab worl	k									

RGPV (Diploma '	Wing )
Bhopal	

В	Branch Code			ourse Code Code Code		LO Code		
M	0	2				5	1	Format No. 4

	_ I									
<b>COURSE NAME</b>	Power plant Engineer	ing								
<b>CO Description</b>	Explain economic consid	erations, po	llution controls	in power plants.						
LO Description	Calculate performance pa	arameters of	power plant un	der given conditio	ns.					

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Cost of electrical energy. Selection of type of generation. Performance and load deviation of power plants. Power tariff types, Load distribution parameters, Comparison of site selection criteria, Capital & Operating Cost of different power plants.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	12	00	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory Exam	Student will be asked to calculate performance parameters of power plant under given conditions.	10	Question Paper + Rating Scale	External

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

# SCHEME FOR LEARNING OUTCOME

	LO Code	CO Code	Code Course Code		Branch Code		
Form	2	5			2	0	M

<b>COURSE NAME</b>	Power plant Engineering			
CO Description Explain economic considerations, pollution controls in power plants.				
LO Description	Practice pollution control alternatives, waste disposal options for power plants.			

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S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Manuals of Pollution control technologies, Waste Disposal Options for Power Plants.	Interactive Classroom teaching / Traditional Chalk-board teaching, quiz, assignments.	Students will learn the processes through the discussion with the teacher on content provided by teacher and random quiz taken by them.	02	05	Chalk board, Paper Pen, Handouts, PPT, Text book, Charts and Videos.	

#### **SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory test by observation	Student will be asked to select an appropriate pollution control technology/waste disposal option for a given power plants.	6	Observation schedule/check-list /rating scales /rubrics	External

### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Part of end semester practical examination

## LIST OF EXPERIMENTS OF POWER PLANT ENGINEERING

S.No.	Name of Experiment
1	Write a report on visit to a hydro power plant to document the specifications of components and power generation
	capacity with schematic arrangement.
2	Write a report on visit to a diesel power plant to document the specifications of components and power generation
	capacity, with schematic arrangement.
3	Write a report on visit to a nuclear power plant to document the specifications of components and power generation
	capacity, with schematic arrangement.
4	List safety measures for hydro power plant using safety manuals.
5	List safety measures for diesel power plant using safety manuals.
6	List safety measures for nuclear power plant using safety manuals.
7	Identify components of a feed water control system.
8	Identify the areas of power plant where temperature is recorded,
9	Identify components of a gas turbine power plant in a schematic diagram/model.
10	Identify components of a wind power plant in a schematic diagram/model.
11	Identify components of a tidal turbine power plant in a schematic diagram/model.
12	Identify components of a solar photo voltaic turbine power plant in a schematic diagram/model.
13	Identify components of a solar thermal turbine power plant in a schematic diagram/model.
14	Identify components of a gio-thermal turbine power plant in a schematic diagram/model.
15	Identify components of a bio-gas turbine power plant in a schematic diagram/model.
16	Identify components of a fuel cell turbine power plant in a schematic diagram/model.
17	Case studies of power plants
18	Select an appropriate pollution control technology/waste disposal option for a given power plants.