

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT- 3	Sheet No.
Branch	Mechanical Engineering			Semester	VI
Course Code		Course Name	Power Plant Engineering		
Course Outcome 1	Describe arrangement, operations and function of power plants.			Teach Hrs	Marks
Learning Outcome 1	Describe energy scenario, energy conversion in power plants of India.			4	05
Contents	Energy needs of India. Introduction to power plants & their importance, power plants concepts, types and energy conversion in each type				
Method of Assessment	Paper pen test (Part of term work- internal)				
Learning Outcome 2	List features of National Grid.			2	05
Contents	Power scenario of India, National Grids.				
Method of Assessment	Paper pen test (Part of term work- internal)				
Learning Outcome 3	Describe arrangement, operations and functions of Hydro, diesel, nuclear power plants.			10	15
Contents	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				
Method of Assessment	Theory Exam (Part of end semester theory exam- external)				
Learning Outcome 4	List safety measures for hydro, diesel, nuclear power plants.			3	05
Contents	Safety measures manual for hydro, diesel, nuclear power plants.				
Method of Assessment	Laboratory test by observation (Part of lab work- internal)				
Course Outcome 2	Explain operation and control procedure of steam power plant elements.			Teach Hrs	Marks
Learning Outcome 1	Identify components of a steam power plant in a schematic diagram or model.			6	05
Contents	Schematic diagram of modern thermal power plant. Super heaters and air pre heaters.				
Method of Assessment	Laboratory test by observation (Part of lab work- internal)				
Learning Outcome 2	Explain construction and working of steam power plant elements using neat sketches.			6	10

Contents	Fuel handling systems-methods of coal handling like pulverized fuel system, etc. Concept of Electro-Static Precipitators (ESP).		
Method of Assessment	Theory Exam (Part of end semester theory exam- external)		
Learning Outcome 3	Explain working of temperature, feed water control systems of a steam power plant.	6	10
Contents	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.		
Method of Assessment	Theory Exam (Part of end semester theory exam- external)		
Learning Outcome 4	Prepare a temperature chart.	3	10
Contents	Need of record keeping, temperature recording at power plant area, temperature recording charts.		
Method of Assessment	Paper pen test(Part of progressive test 1- internal)		
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 Brayton cycle. Arrangement of open and close cycle with constant pressure gas turbine power plant.		
Method of Assessment	Paper pen test (Part 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 auxiliaries of gas turbine power plant. Methods to improve the thermal efficiency of a simple open cycle constant pressure gas turbine power plant (No derivation)		
Method of Assessment	Practical Exam (End semester practical examination- external)		
Learning Outcome 3	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 plant. Advantages of gas turbine power plant over others.		
Method of Assessment	Theory Exam (Part of end semester theory exam- external)		
Course Outcome 4	Explain construction and working of renewable energy power plants.	Teach Hrs	Marks
Learning Outcome 1	Explain construction and working of Hydro Electric Power plants.	5	10
Contents	Hydro Electric Power Plants – Classification, Typical Layout and associated components including Turbines		
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 Photo Voltaic		

	(SPV), Solar Thermal power plants		
Method of Assessment	Practical Exam (Part of end semester practical examination- external)		
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, Biogas, Fuel Cell power systems.		
Method of Assessment	Practical Exam (End semester practical examination- external)		
Learning Outcome 4	Select a suitable renewable energy power plant on the basis of available resources.	6	10
Contents	Case studies of Hydro, Wind, Tidal, Solar Photo Voltaic (SPV), Solar Thermal, Biogas, Fuel Cell power systems.		
Method of Assessment	Laboratory test by observation (Part of lab work- internal)		
Course Outcome 5	Explain economic considerations, pollution controls in power plants.	Teach Hrs	Marks
Learning Outcome 1	Calculate performance parameters of a power plant under given condition.	12	10
Contents	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.		
Method of Assessment	Theory Exam (Part of end semester theory exam- external)		
Learning Outcome 2	Practice pollution control alternatives, waste disposal options for power plants.	7	6
Contents	Manuals of Pollution control technologies, Waste Disposal Options for Power Plants.		
Method of Assessment	Practical Exam (End semester practical examination- external)		

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				1	1	
COURSE NAME	Power plant Engineering												
CO Description	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													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				1	2	
COURSE NAME	Power plant Engineering												
CO Description	Describe arrangement, operations and function of power plants.												
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													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				1	3	
COURSE NAME		Power plant Engineering											
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	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	<p>Hydro power plant: General arrangement & its operation, classification, advantages and disadvantages, technical data of hydro power plants in India,</p> <p>Diesel power plant: General arrangement & its operation, classification, advantages and disadvantages, technical data of diesel engine power plants in India,</p> <p>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.</p>	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)													
Part of end semester theory exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>				<i>1</i>	<i>4</i>	
COURSE NAME	Power plant Engineering												
CO Description	Describe arrangement, operations and function of 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													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				2	1	
COURSE NAME	Power plant Engineering												
CO Description	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													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				2	2	
COURSE NAME	Power plant Engineering												
CO Description	Explain operation and control procedure of steam power plant elements.												
LO Description	Explain construction and working of steam power plant elements using neat sketches.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Fuel handling systems- methods of coal handling like pulverized fuel system, etc. Concept of Electro-Static Precipitators (ESP).	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.	06	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 describe construction and working of steam power plant elements using neat sketches.	10	Question Paper + Rating Scale			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of end semester theory exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					M	0	2				
COURSE NAME	Power plant Engineering										
CO Description	Explain operation and control procedure of steam power plant elements.										
LO Description	Explain working of temperature, feed water control systems of a steam 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	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)											
Part of end semester theory examination											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					M	0	2				
COURSE NAME	Power Plant Engineering										
CO Description	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											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					<i>M</i>	<i>0</i>	<i>2</i>				<i>3</i>	<i>1</i>	
COURSE NAME	Power plant Engineering												
CO Description	Explain construction and working of Gas turbine power plants.												
LO Description	Draw a labeled schematic diagram 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	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													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				3	2	
COURSE NAME	Power plant Engineering												
CO Description	Explain construction and working of Gas turbine power plants.												
LO Description	Identify components of a gas turbine 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	Components of gas turbine power plant. Essential auxiliaries of gas turbine power plant. Methods to improve the thermal efficiency of a simple open cycle constant pressure gas turbine power plant (No derivation)	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	06	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 gas turbine power plant elements using neat sketches.	8	Observation schedule/check-list /rating scales /rubrics			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
End semester practical examination													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				3	3	
COURSE NAME	Power plant Engineering												
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)													
Part of end semester theory exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				4	1	
COURSE NAME	Power plant Engineering												
CO Description	Explain construction and working of renewable energy power plants.												
LO Description	Explain construction and working of Hydro Electric 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	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)													
Part of end semester theory exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				4	2	
COURSE NAME	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 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	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	Description of Assessment	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 (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				4	3	
COURSE NAME	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 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	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 Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				4	4	
COURSE NAME	Power plant Engineering												
CO Description	Explain construction and working of renewable energy power plants.												
LO Description	Select a suitable renewable energy power plant on the basis of available resources.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Case studies of Hydro, Wind, Tidal, Solar Photo Voltaic (SPV), Solar 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.	00	06	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 a suitable renewable energy power plant on the basis of given resources.	10	Observation schedule/check-list /rating scales /rubrics			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of Lab work													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				5	1	
COURSE NAME	Power plant Engineering												
CO Description	Explain economic considerations, pollution controls in power plants.												
LO Description	Calculate performance parameters of power plant under given conditions.												
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)													
Part of end semester theory exam													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					M	0	2				5	2	
COURSE NAME	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.												
SCHEME OF STUDY													
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.