SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, KORAPUT

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Name of the Course : TH-1 : INDUCTION TO ELECTRIC GENERATION SYSTEM			
Name of the Faculty: Er. SAMIR RANJAN PATRO			
Semester from date : 01.07.2026 TO 05.11.2026			
Course Code :	EEPC201	Semester :	3rd
Total Periods:	45 Periods	Examination :	3Hrs
Theory Periods :	45 Hrs.	Progressive Assessment :	30
Lecture :	3Hrs/week	End Term Exam :	70
Credit :	3	Total Marks :	100

VISION:

To create competent and industry ready Electrical Diploma Engineers with professional and social values to meet future challenges.

MISSION:

- To prepare diploma holders through "qualitative competency-based education system" to compete with national requirement along with core values.
- To produce dynamic Electrical Engineers to serve the society and industry.
- To develop leadership qualities, communication skills, critical thinking and attitude for lifelong learning.

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1	Applying technical knowledge and skills learned in the field of Electrical Engineering to excel in professional and/or higher education.
PEO2	To provide students an excellent academic environment and make them aware the needs of Society and Industry to become a successful Professional/Entrepreneur.
PEO3	To engage in lifelong learning, career enhancement to adopt to emerging technologies.

COURSE OUTCOME:

CO1	Explain the optimized working of the thermal power plant
CO2	Describe the efficient operation of large hydropower plants.
CO3	Describe the efficient operation micro hydropower plants.
CO4	Select the adequate mix of power generation based on economic operation.

TOPIC WISE DISTRIBUTION OF PERIODS

Unit No.	Topics	Periods
I	**Thermal Power Plants: Coal, Gas/Diesel and Nuclear-based**	16
II	**Large Hydropower Plants**	09
III	**Micro-Hydropower Plants**	08
IV	**Economics of Power Generation and Interconnected Power System**	12

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Week	Day	Theory Topic	Corresponding CO
1st	MONDAY	NO CLASS	
	TUESDAY	NO CLASS	
	THURSDAY	Layout and working of a typical thermal power plant with steam turbines and electric generators	CO1
2nd	MONDAY	Layout and working of a typical thermal power plant with steam turbines and electric generators	CO1
	TUESDAY	Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal	CO1
	THURSDAY	Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Gas	CO1
3rd	MONDAY	Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Diesel,	CO1
	TUESDAY	Nuclear fuels-fusion and fission action	CO1
	THURSDAY	Safe Practices and working of various thermal power plants: coal based	CO1
4th	MONDAY	Safe Practices and working of various thermal power plants: gas- based	CO1
	TUESDAY	Safe Practices and working of various thermal power plants: diesel-based	CO1
	THURSDAY	Safe Practices and working of various thermal power plants: nuclear-based	CO1
5th	MONDAY	Functions of thermal power plants and their major Auxiliaries - Coal fired boilers based combustion engines	CO1
	TUESDAY	Functions of thermal power plants and their major Auxiliaries - fire tube and water tube based combustion engines	CO1
	THURSDAY	Functions of thermal power plants and their major Auxiliaries - Gas/diesel based combustion engines	CO1
	MONDAY	Types of nuclear reactors : Disposal of nuclear waste	CO1
	TUESDAY	Types of nuclear reactors : nuclear shielding	CO1

6th	THURSDAY	Energy conversion process of hydro power plant	CO2
7th	MONDAY	Classification of hydro power plant: High ,medium and low head	CO2
	TUESDAY	Construction and working of hydro turbines used in different types of hydro power plant - High head-Pelton turbine	CO2
	THURSDAY	Construction and working of hydro turbines used in different types of hydro power plant - High head-Pelton turbine	CO2
8th	MONDAY	Construction and working of hydro turbines used in different types of hydro power plant - Medium head-Francis turbine,	CO2
	TUESDAY	Construction and working of hydro turbines used in different types of hydro power plant - Medium head-Francis turbine,	CO2
	THURSDAY	Construction and working of hydro turbines used in different types of hydro power plant - Low head-Kaplan turbine	CO2
9th	MONDAY	Safe Practices for hydro power plants	CO2
	TUESDAY	Locations of these different types of large hydro power plants in India	CO2
	THURSDAY	Lay out of micro hydro power plants	CO3
10th	MONDAY	Different types of micro-hydro turbines for different heads: Pelton turbines	CO3
	TUESDAY	Different types of micro-hydro turbines for different heads: Pelton turbines	CO3
	THURSDAY	Different types of micro-hydro turbines for different heads: Francis turbines	CO3
11th	MONDAY	Different types of micro-hydro turbines for different heads: Francis turbines	CO3
	TUESDAY	Different types of micro-hydro turbines for different heads: Kaplan turbines	CO3
	THURSDAY	Different types of micro-hydro turbines for different heads: Kaplan turbines	CO3
12th	MONDAY	Locations of these different types of micro-hydro power plants in India	CO3
	TUESDAY	Related terms: connected load, firm power, cold reserve	CO4
	THURSDAY	Related terms: hot reserve, spinning reserve. Base load and peak load plants	CO4
13th	MONDAY	Related terms:Load curve, load duration curve, integrated duration curve	CO4
	TUESDAY	Cost of generation: Average demand, maximum demand,	CO4

		demand factor, plant capacity factor	
	THURSDAY	Cost of generation: plant use factor, diversity factor, load factor and plant load factor	CO4
14th	MONDAY	Choice of size and number of generator units	CO4
	TUESDAY	Choice of size and number of generator units	CO4
	THURSDAY	Combined operation of power station Causes, Impact and reasons of Grid system fault: State grid, national grid, brownout and blackout; sample blackouts at national and international level.	CO4
15th	MONDAY	Combined operation of power station Causes, Impact and reasons of Grid system fault: State grid, national grid, brownout and blackout; sample blackouts at national and international level.	CO4
	TUESDAY	Combined operation of power station Causes, Impact and reasons of Grid system fault: State grid, national grid, brownout and blackout; sample blackouts at national and international level.	CO4
	THURSDAY	Review of doubt	CO4

18/06/2026

Signature of Faculty Concerned
(Electrical Engg.)

18/06/2026

Head of Department
(Electrical Engg.)

H.O.D
Electrical Engg
SIET, KORAPUT

18/06/2026

Principal
S.I.E.&T, KORAPUT

Principal
Siddharth Institute of Engineering & Technology Ekingguda, Koraput