



Shri Vithal Education & Research Institute's

COLLEGE OF ENGINEERING, PANDHARPUR



P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accredited Institute, ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:-

Date:-

1.3.3 Number of the student studied course on experimental learning through Project Work / Internship

Programme Name: Electrical Engineering			
Programme Code: 1-3675277161			
Year of offering: 2019-2020			
Sr. No.	Name of the Course that include experiential learning through project work/field work/internship	Course code	Number of the student studied course on experiential learning through project work/field work/internship
1.	Power System-I		41



B. Range
PRINCIPAL,
College of Engineering
PANDHARPUR

**SVERI's
College of Engineering, Pandharpur
Electrical Engineering Department**

Industrial Visit Record

Subject:- Power System-I

Class: S.Y.B.Tech.

A.Y.: 2019-2020



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ISO 9001:2015



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REPORT

The Department of Electrical Engineering arranged Industrial Visit at **Gas Power Plant, Uran** on **22nd September to 23rd September 2019**. The motto behind this industrial visit was that , the students should get the detailed practical knowledge of working of power plant with real time practical approach. Student understood the working of each and every part related to the Gas power plant. The economic aspects related to the power plant were also analyzed by the students. Total 41 students of S.YB.Tech Electrical participated were present for the Industrial Visit. The faculty members from Electrical department worked actively for the successful completion of Industrial Visit. The outcome for this visit are:

- 1) Student understood the operation of gas power plant.

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HoD

Electrical



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Department of Electrical Engineering
Name of the Students for Industrial Visit at "Gas Power Plant, Uran"
Date: 22nd September to 23rd September 2019

Sr No.	Name of Student	Sr No.	Name of Student
01	/BHONDAVE SNEHAL NARAYAN	33	LONDHE SHANTANU YASHWANT
02	BHOSALE NEHA SUKHADEV	34	MULE SAURABH DATTATRAY
03	DHOLE VAISHNAVI RAMESHWAR	35	MUNGUSKAR VAIBHAV POPAT
04	EKATPURE GAYATRI RAJENDRA	36	NARKAR MANGESH HARIBHAU
05	HOMKAR POONAM HANUMANT	37	NIKAM SHRISHAIL RAVSAHEB
06	KALE SAKSHI DHANANJAY	38	PATIL SHANTANU RANGANATH
07	/LAVATE PRATIKSHA SHIVAJI	39	SURAVASE SHIVAJI BHIVAJI
08	/MAHARNAVAR SHIVANI BALASO	40	MANE KAIVALYA KAKASAHEB
09	/MANE SANSKRUTI SAINATH	41	SHINDE AKASH DATTATRAY
10	/METAKARI SONAL LAHU		
11	/NANAVARE AMRUTA SURESH		
12	/NAVALE PRATIDNYA RAJU		
13	/ROKADE KIRAN SOPAN		
14	/RUPNAR ANUSHKA MACCHINDRA		
15	/SALGARE PAYAL RAOSAHEB		
16	/SAWANT KISHORI SANTOSH		
17	/SURVE SAKSHI BALASAHEB		
18	BORATE ADITYA DHANAJI		
19	DOSHI SHUBHAM TARKESHWAR		
20	GAVHANE CHETAN SURESH		
21	GHADGE NARAYAN INDRAJIT		
22	GHATULE NIRANJAN BALASAHEB		
23	GAHIRWAR KUNDANSING		
24	HOWAL CHAITANYA DAYANAND		
25	INGALE VISHAL ANNASO		
26	JADHAV RUSHIKESH RAJENDRA		
27	KAMBLE ABHIJIT ARVIND		
28	KECHE AKSHAY BHAGAVAT		
29	KOKANE SAMEER SAMBHAJI		
30	KUMAR SURESH KRISHAN		
31	LADE TUSHAR HARIDAS		
32	LAMKANE KIRAN EKNATH		

(Signature)

HOD

Electrical Engineering

Industrial Visit At "Gas Power Plant, Uran "



Visit:

Industrial Visit

Date - 22-9-19
Time - 11.00 pm

Date:

DEPARTMENT OF ELECTRICAL ENGINEERING

CLASS: S. Y. B Tech ELECT

Sr.NO	Name of Student	Sign
1	AMBULE SHRADDHA ARJUN	NOT COME
2	BHONDAVE SNEHAL NARAYAN	Bhondave
3	BHOSALE NEHA SUKHADEV	Neha
4	DHOLE VAISHNAVI RAMESHWAR	Dhole
5	EKATPURE GAYATRI RAJENDRA	Ekatpure
6	HOMKAR POONAM HANUMANT	Homkar
7	KALE SAKSHI DHANANJAY	Kale
8	MAHARNAVAR SHIVANI BALASO	Mahar
9	MANE SANSKRUTI SAINATH	Mane
10	METAKARI SONAL LAHU	Metakar
11	NANAVARE AMRUTA SURESH	Nanavar
12	NAVALE PRATIDNYA RAJU	Navale
13	RUPNAR ANUSHKA MACCHINDRA	Rupnar
14	ROKADE KIRAN SOPAN	Rokade
15	SALGARE PAYAL RAOSAHEB	Salgare
16	Sawat Kishori S	Sawat
17	Lavate Snehal	Lavate
18	SURVE SAKSHI BALASAHEB	Surve
19	BORATE ADITYA DHANAJI	Borate
20	DOSHI SHUBHAM TARKESHWAR	Doshi
21	GAHIRWAR KUNDANSING KIRANSING	Gahirwar
22	GAVHANE CHETAN SURESH	Gavhane
23	GHADGE NARAYAN INDRAJIT	Ghadge
24	GHATULE NIRANJAN BALASAHEB	Ghatule
25	HOWAL CHAITANYA DAYANAND	Howal
26	MUMBE DIPAK JAMBHAVANT	Mumbe
27	INGALE VISHAL VINAYASO	Ingle
28	JADHAV RUSHIKESH RAJENDRA	Jadhav
29	KAMBLE ABHIJIT ARVIND	Kamble
30	KECHE AKSHAY BHAGAVAT	Kech
31	KOKANE SAMEER SAMBHAJI	Kokane
32	KUMAR SURESH KRISHAN	Kumar
33	LADE TUSHAR HARIDAS	Lade
34	LAMKANE KIRAN EKNATH	Lamkane
35	LONDHE SHANTANU YASHWANT	Londhe
36	MANE KAIVALYA KAKASAHEB	Mane
37	MULE SAURABH DATTATRAY	Mule
38	MUNGUSKAR VAIBHAV POPAT	Munguskar
39	NARKAR MANGESH HARIBHAU	Narkar
40	NIKAM SHRISHAIL RAVSAHEB	Nikam
41	PATIL SIANTANU RANGANATH	Patil
42	SHINDE AKASH DATTATRAY	Shinde
43	SURAVASE SHIVAJI BHIVAJI	Suravase

1	Prof S C Ukirade
2	Prof S K Akireddi
3	Prof Anitha Chirra

4. Prof S.S. Kangle
44. Lavate Pratiksha Shivaji

Ukirade

Pratiksha

CC-1

Industrial Visit
Visit: gas Power Plant, Uran
DEPARTMENT OF ELECTRICAL ENGINEERING

Date - 23-9-19
Time - 2:30pm

CLASS: S. Y. B Tech ELECT

Sr.NO	Name of Student	
1	/AMBULE SHRADDHA ARJUN	
2	/BHONDAVE SNEHAL NARAYAN	Gshondave
3	/BHOSALE NEHA SUKHADEV	Neha
4	/DHOLE VAISHNAVI RAMESHWAR	
5	/EKATPURE GAYATRI RAJENDRA	
6	/HOMKAR POONAM HANUMANT	Homkar
7	/KALE SAKSHI DHANANJAY	
8	/MAHARNAVAR SHIVANI BALASO	
9	/MANE SANSKRUTI SAINATH	
10	/METAKARI SONAL LAHU	Shankar
11	/NANAVARE AMRUTA SURESH	Aruki
12	/NAVALE PRATIDNYA RAJU	Pratidny
13	/RUPNAR ANUSHKA MACCHINDRA	Anushka
14	ROKADE KIRAN SOPAN	
15	/SALGARE PAYAL RAOSAHEB	Salgare PR
16	/Sawat Kishori S	K.s.cawant
17	Lavate Snehal	
18	/SURVE SAKSHI BALASAHEB	Surve
19	BORATE ADITYA DHANAJI	Borate
20	DOSHI SHUBHAM TARKESHWAR	S.T.Doshi
21	GAHIRWAR KUNDANSING KIRANSING	Gand
22	GAVHANE CHETAN SURESH	Chetan Gavhane
23	GHADGE NARAYAN INDRAJIT	Indrajit
24	GHATULE NIRANJAN BALASAHEB	Niranj
25	HOWAL CHAITANYA DAYANAND	Chaitanya
26	HUMDE DILAK JAYSHYAM	
27	INGALE VISHAL ANNASO	Ingale
28	JADHAV RUSHIKESH RAJENDRA	Rushikesh
29	KAMBLE ABHIJIT ARVIND	Abhijit
30	KECHE AKSHAY BHAGAVAT	Akshay
31	KOKANE SAMEER SAMBHAJI	Sameer
32	KUMAR SURESH KRISHAN	Suresh
33	LADE TUSHAR HARIDAS	Tushar
34	LAMKANE KIRAN EKNATH	Kiran Lamkane
35	LONDHE SHANTANU YASHWANT	Shantanu
36	MANE KAIVALYA KAKASAHEB	Kaivalya
37	MULE SAURABH DATTATRAY	Saurabh
38	MUNGUSKAR VAIBHAV POPAT	Vaibhav
39	NARKAR MANGESH HARIBHAU	Mangesh
40	NIKAM SHRISHAIL RAVSAHEB	Shrishail
41	PATIL SHANTANU RANGANATH	Shantanu
42	SHINDE AKASH DATTATRAY	Akash
43	SURAVASE SHIVAJI BHIVAJI	Shivaji

1	Prof S C Ukirade	Ukirade
2	Prof S K Akireddi	Akireddi
3	Prof Anitha Chirra	Chirra

44. Lavate Pratidnya Shivaji

Pratidny

C.G

Punyashlok Ahilyadevi Holkar Solapur University, Solapur



Name of the Faculty: Science & Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: ELECTRICAL ENGINEERING

**Name of the Course: S.Y. B.Tech
(Syllabus to be implemented from w.e.f. June 2019)**

Punyashlok Ahilyadevi Holkar Solapur University, Solapur
S. Y. B. Tech. Electrical Engineering Semester-I
POWER SYSTEM-I

Teaching Scheme	Examination Scheme
Theory: - 3Hrs/Week,1 Credits	ESE – 70 Marks
Tutorial: - 1Hrs/Week, 1 Credit	ICA-25Marks
	ISE- 30Marks

This course introduces power plant which deals with generation of electrical energy The course also introduces economic aspects of different power plants

Course Prerequisite:

Knowledge of Basic Electrical Engineering, simple mathematical calculations Student shall have knowledge of energy conversion Student shall also have basic knowledge types of energy sources

Course Objectives:

- To develop conceptual understanding of operation of different power plants
 - To learn economic aspects of power system.
 - To study necessity and types of non-conventional energy sources
 - To make students understand overhead structure of power system.
-

Course Outcomes:

After successful completion of this course,

- Student will be able to understand operation of different power plants
 - Student will be able to analyze economic aspects of power system
 - Student will be able to investigate need and areas of application for non-conventional energy sources
 - Students will be able to understand overhead structure of power system.
-

SECTION-I

Unit 1 Economic Aspects of Power Generation

No of lectures-08

• **Prerequisite:**

Knowledge of Basic Electrical Engineering, simple mathematical calculations

• **Objectives:**

- To introduce to student basic terms used in power system operation
- To make student understand load curve
- To introduce student to types of loads
- To familiarize the students with the tariff methods for electrical energy consumptions

- **Outcomes:**
After completing this unit, students –
 - Can define different terms in power system operation
 - Can analyze selection of generating units
 - Can calculate usage of electrical power & tariff
- **Unit Content:**
Review of terms commonly used in system operations, Variable load on power station, Peak load, Base load, Diversity factor, Plant utility factor, Maximum demand, Load curves, load duration curves, Types of loads, Selection of generation units, Interconnected grid systems, Cost of electrical energy, Tariff & different types of tariff
- **Content Delivery Methods:**
Chalk and talk, power point presentation
- **Assessment Methods:**
Numerical problems related to cost of electrical energy and tariff, Theory questions related to above content

Unit 2 Base Load Power Plants

No of lectures-08

- **Prerequisite:**
Energy sources, Energy conversion methods
- **Objectives:**
 - Revision of Energy Sources.
 - To introduce student to different Conventional & non-Conventional Energy sources.
 - To make student understand different base load power plants.
- **Outcomes:**
After completing this unit, students -
 - Can define conventional & non-conventional sources
 - Can compare different base load power plants
- **Unit Content:**
Different types of conventional and non-conventional energy sources, Structure of power industry,
Hydro Power Plant: Typical layout, Site selection, Classification, Hydrograph, Flow duration curves, Hydrology, Types of turbines.
Thermal Power Plant: Typical layout, Site selection, Fuels & their handling, Combustion process, Ash handling, Dust collection.
Nuclear Power Plant: Typical layout, Site selection, Nuclear reaction, Classification of nuclear reactor (AGR,PWR,BWR), Nuclear waste disposal, Environmental Aspects
- **Content Delivery Methods:**
Chalk and talk, Power point presentations on Energy Sources
- **Assessment Methods:**

Theory questions related to above content.

Unit 3 Peak Load Power Plants

No of lectures-5

- **Prerequisite:**
Knowledge of Basic Electrical Engineering & nuclear reaction
- **Objectives:**
 - 1) To introduce student to Diesel & Gas Turbine Power Plants
 - 2) To introduce student to solar & Wind Power Plants
 - 3) To make student analyze typical layout of solar & Wind Power Plants

Outcomes:

After completing this unit, students –

1. Can apply the operation of Diesel & Gas Turbine Power Plants
2. Can apply the operation of solar & Wind Power Plants

- **Unit Content:**
Review of Diesel Plants (advantages & disadvantages), Typical layout of power plant, site selection, Review of Gas Turbine Plants (advantages & disadvantages), Typical layout of power plant, Site selection, Review of Solar Energy (advantages & disadvantages), Typical layout of solar thermal power plant, Site selection, Review of wind energy (advantages & disadvantages), Typical layout of wind power plant, Site selection
- **Content Delivery Methods:**
Chalk and talk, power point presentation
- **Assessment Methods:**
Theory questions related to above content

SECTION II

Unit 4– General structure of power system

No of lectures – 08

- **Prerequisite:**
DC system, single phase & three phase systems, ohms law
- **Objectives:**
 1. To learn basic structure of power systems
 2. To make student understand different transmission systems
 - **Outcomes:**
After completing this unit, students -
 1. Can distinguish between different supply systems
 2. Can compare between AC and DC transmission System.
 3. Can compare between overhead and underground System.

Unit Content:

Review of Electrical supply system, typical AC power supply scheme, Comparison DC and AC systems, comparison between overhead and underground system

- **Content Delivery Methods:**

Chalk and talk, power point presentations

- **Assessment Methods:**
Theory questions related to above content

Unit 5– Economic Aspects of Transmission System

No of lectures – 08

- **Prerequisite:**
DC system, single phase & three phase systems, ohms law
- **Objectives:**
 - 1) To make student understand conductor cost of different AC transmission systems
 - 2) To make student understand Economics of power transmission
- **Outcomes:**
After completing this unit, students -
 - 1) Can calculate voltage, conductor cost for various transmission systems
 - 2) Can calculate Economic conductor size for given transmission system (Kelvin's law)
- **Unit Content:**
Comparison of conductor cost for various Overhead AC transmission systems, comparison of conductor cost for various Underground AC transmission systems, Economic choice of conductor size by kelvins law
- **Content Delivery Methods:**
Chalk and talk, power point presentations
- **Assessment Methods:**
Numerical problems and derivation related to conductor cost for different transmission systems and Kelvin's law Theory questions related to above content

Unit 6– Mechanical design of overhead lines

No of lectures – 05

- **Prerequisites:**
Electrical Materials & their properties, Capacitance
- **Objectives:**
 1. To introduce concept of overhead transmission line
 2. To introduce different conducting material & their application
 3. To introduce different insulators & their application
 4. To make student understand string efficiency & methods to improve it
- **Outcomes:**
After completing this unit, students -
 1. Can describe construction and use of different insulators, conductor, line supports
 2. Can calculate string efficiency of given string insulators
- **Unit Content:**
Review of overhead transmission line, main components, conductor materials, line supports, overhead line insulators, types- pin type, suspension type, strain type insulators, string efficiency, methods of improving string efficiency
- **Content Delivery Methods:**

Chalk and talk, power point presentations, videos lectures on insulators, line supports

- **Assessment Methods:**

Numerical problems and derivation related to string efficiency, Theory questions related to above content

- **Internal Continuous Assessment (ICA) :**

ICA shall consist of Minimum **FOUR** drawing Sheetson above syllabus and **report on visit** to any one of the generating power plant

- **Text Books:**

- 1) “A course in Electrical Power”, S K Kataria & Sons, J B Gupta
- 2) “Generation of Electrical Energy”, S Chand Publication, B R Gupta
- 3) “Power System Engineering”, Laxmi Publications, R K Rajput
- 4) “Power Plant Engineering”, New Age International Publication, A K Raja

- **Reference Books:**

- 1) “ Power Plant Technology”, Tata Mc Graw Hill,MMEI-Wakil
 - 2) “Power Plant Engineering”, S Chand Publications, Samsheer Gautam
-