N. K. Orchid College of Engineering and Technology, Solapur
Two-week Students Internship Program
by
Electrical Engineering Department

Title:	"Two week Online Internship on PLC and SCADA"
Duration:	11th January to 23rd January 2021
Mode:	Online sessions organised using Zoom
No. of Participants attended:	Total 58 students from T.E Electrical
Faculty Coordinators :	Prof.N.U.Gawali and Prof.D.D.Pawar

About the Internship

Two-week Online Internship on PLC and SCADA was arranged by electrical Department for TE students from 11th January to 23rd January 2021 under the co-curricular activity program. Total 58 students were actively participated in this Internship. A brief summary of workshop is given as follows.

Automation is a set of technologies that results in operation of machines and systems without significant human intervention and achieves performance superior to manual operation. PLCs are becoming prominent in industrial Automation and process control applications.

The purpose of this multidisciplinary field is the study of industrial automation from an engineering perspective and serves the purposes of controlling advanced industrial automation systems. In the present course, opportunities will be provided for establishing confidence in working in the area of Industrial Automation.

Objective of Internship

1) The primary objectives of this PLC and SCADA Internship was to improve student's IT/Programming Logic skills and thus improves their employment potential. Electrical students specially get benefit of this free of cost software to work on Industrial Automation.
2) To cater the basic knowledge on industrial automation and increase the consistency, quantity and quality of goods produced in an industry to complete in global markets.
3) To create a group of experts who have training in skills needed for automation in an industry by providing solid background in PLC programming and overview of SCADA.

Outcome of Internship

1) To execute fundamental concepts of Industrial Automation in PLC and SCADA Domain
2) The Internship provides necessary theory and applications of the use of new technologies in design of industrial automation systems
3) To Provide unique environment to build multi skilled technical professional having hands on experience on various aspects of most widely used modern Industrial automation tools.

Course Content

Programmable logic controller (PLC)

- Introduction
- Architecture of Industrial Automation Systems
- Role of PLC in automation
- Introduction to PLC hardware (Allen Bradly Micrologix 1400)
- Architectural Evolution of PLC
- PLC Fundamentals - (Block diagram of PLC's)
- Problems on Ladder Logic
- Detail information about PLC components
- Various ranges available in PLCs
- Types of Inputs & outputs
- Source Sink Concept in PLC
- Introduction to PLC programming software
- Addressing concepts
- Introduction to bit, byte & word concept
- Programming instructions arithmetic and
- Logical Load /and /or/out / and Read / Write
- Logical Load /and /or/out / and Read / Write
- Compare / Add / Sub /And /Or – Blocks
- MOVE block application
- Timer Blocks programming
- Counter Block programming

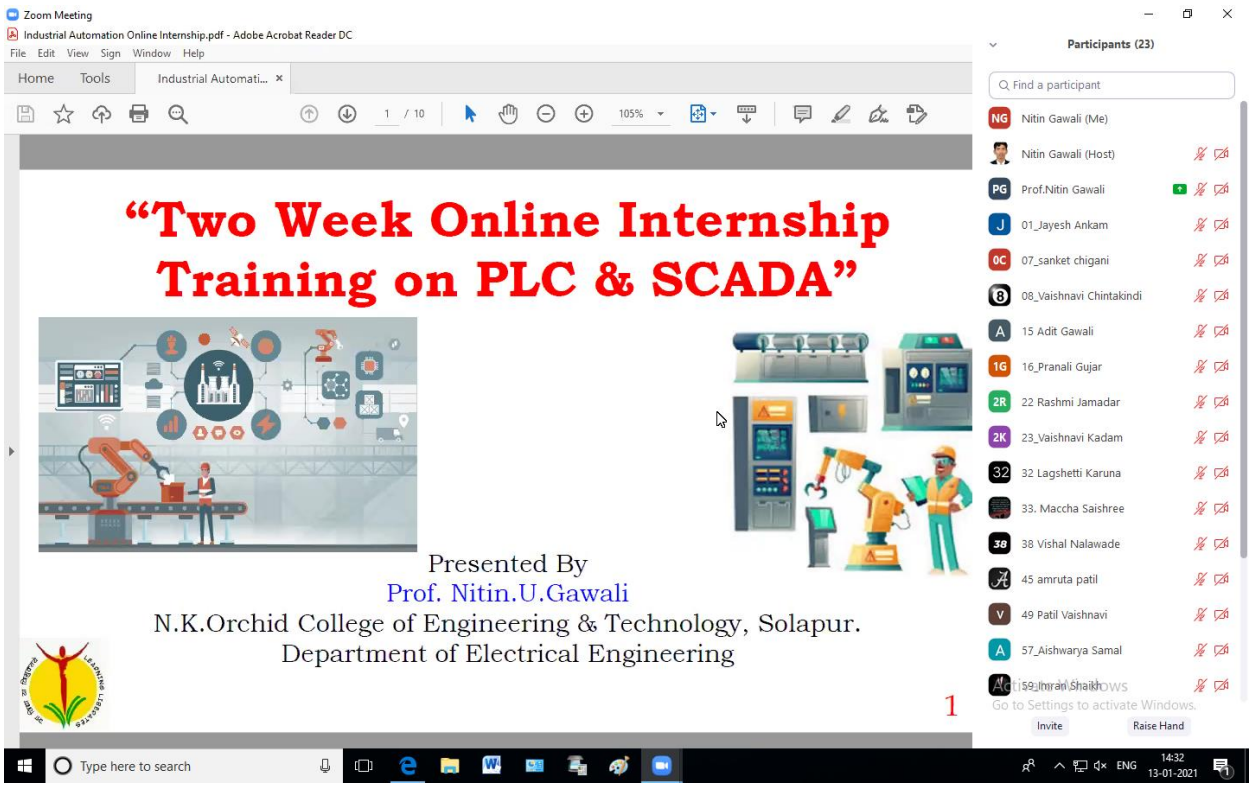
Supervisory Control and Data Acquisition systems (SCADA)

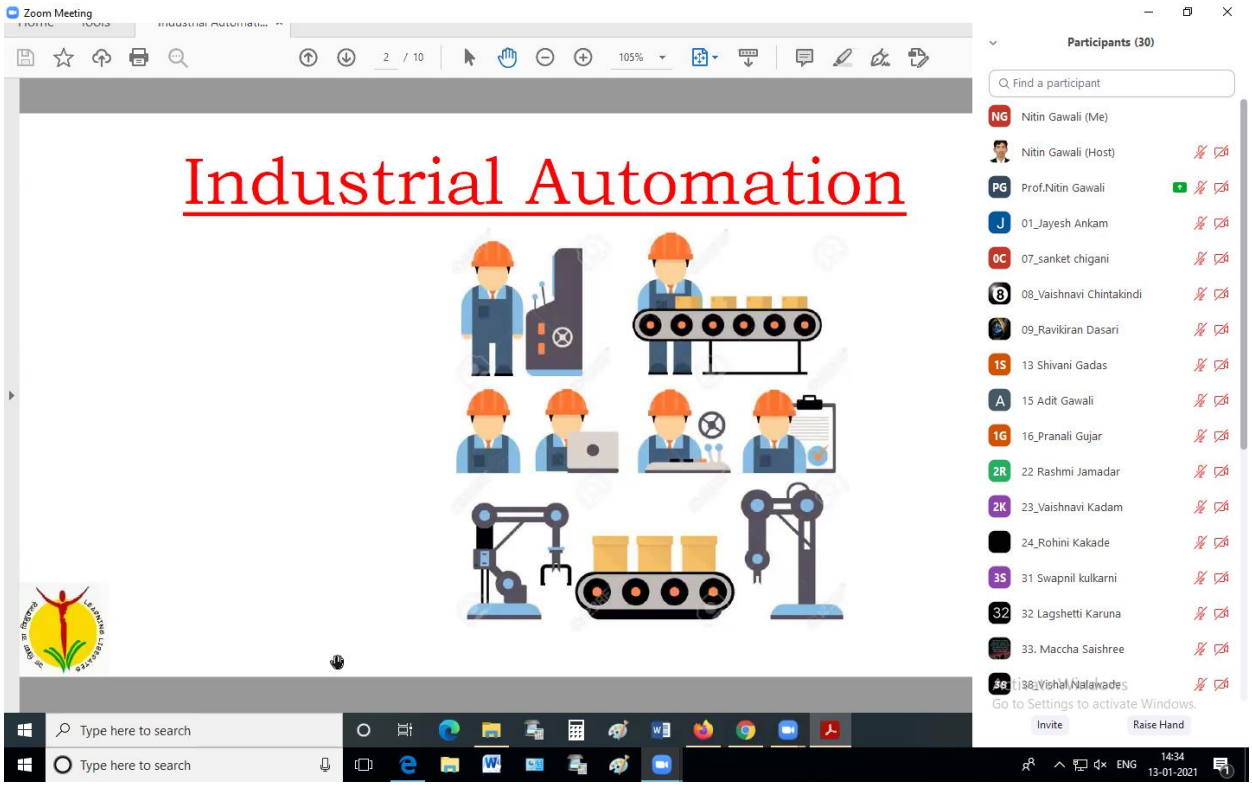
- Introduction and definitions of SCADA,
- Basic SCADA system Architecture Human Machine Interface,
- Master Terminal Unit, Remote Terminal Unit. SCADA data transfer through PLCC. Communication Technologies, Communication system components, SCADA Communication in an electrical power system,
- SCADA system desirable Properties, Real Time System, SCADA server, SCADA functions
- Creating a new SCADA application
- Creating & editing graphic display with Animation.
- Creating Real-time & Historical Trends
- Creating Alarms & Events
- Writing logic through script
- Connectivity with PLC Troubleshooting the application

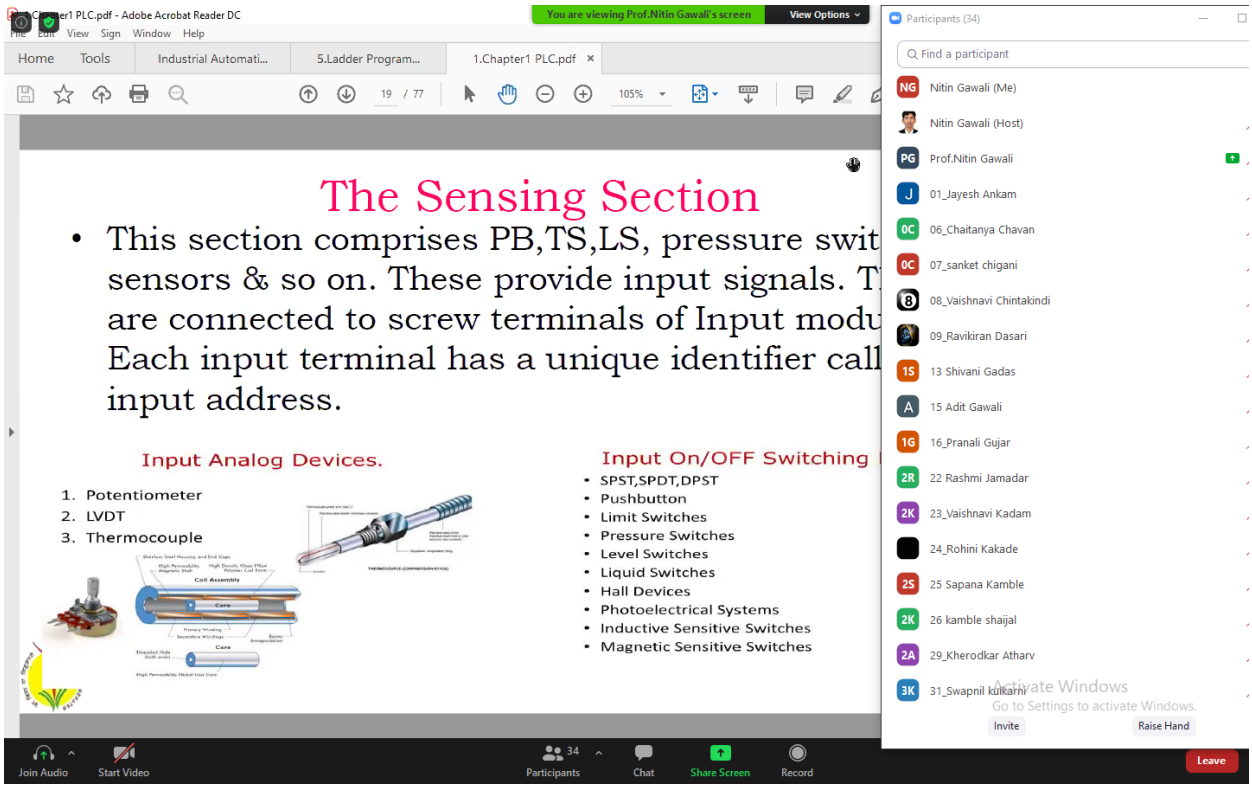
Workshop Details:

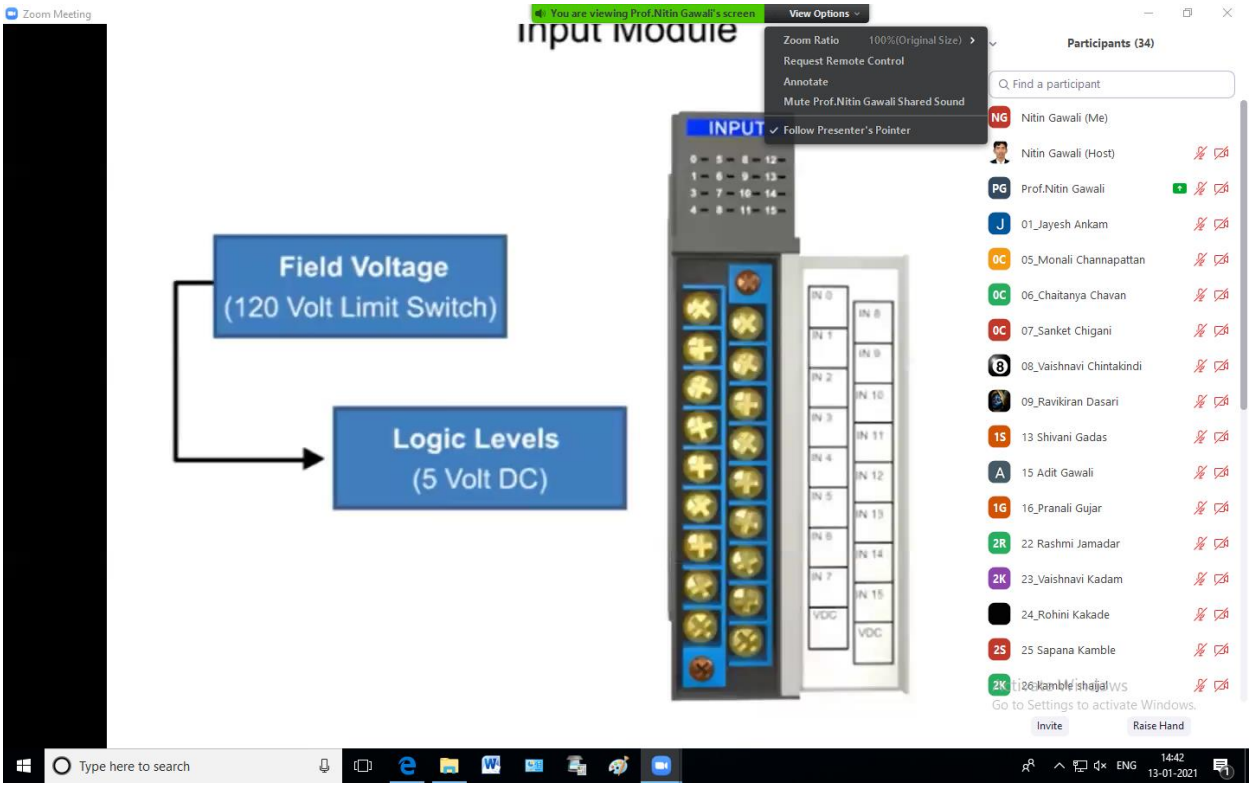
- Two-week Online Internship on PLC and SCADA for TE Students was conducted from 11/01/2021 to 23/01/2021.
- Workshop was conducted through Online Platform and Ladder Programming was taught using Codesys V2.3 & RS Logix Microlite software by Prof. N.U. Gawali.
- In the workshop sessions, step-by-step development of Gate logic, Relay Logic & PLC Ladder logic for industrial applications were demonstrated.
- Ladder Programming tasks were given to the students after demonstration sessions in order to have a learning experience.
- Valedictory session was conducted on 23/01/2021 in which the students gave demonstration of programs they developed and feedback of their overall learning experience. The department initiatives were shared by Prof. V.S. Shirwal (H.O.D Electrical) for all the participants.
- E-Certificates were provided to the students after completion of the workshop and feedback process.
- The entire course was planned, coordinated and conducted by Prof.N.U. Gawali & Prof.D.D.Pawar along with a strong support from entire Electrical Department.

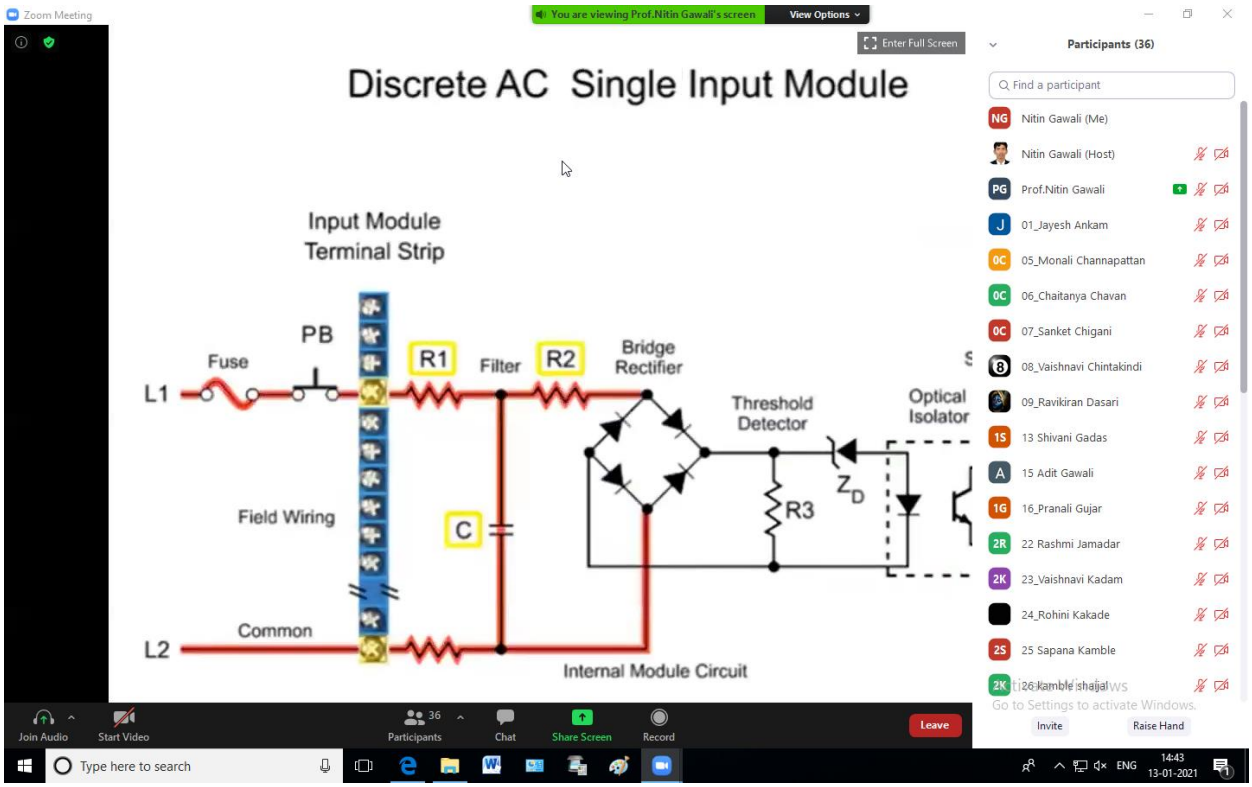
Glimpse of Online “PLC and SCADA” Internship

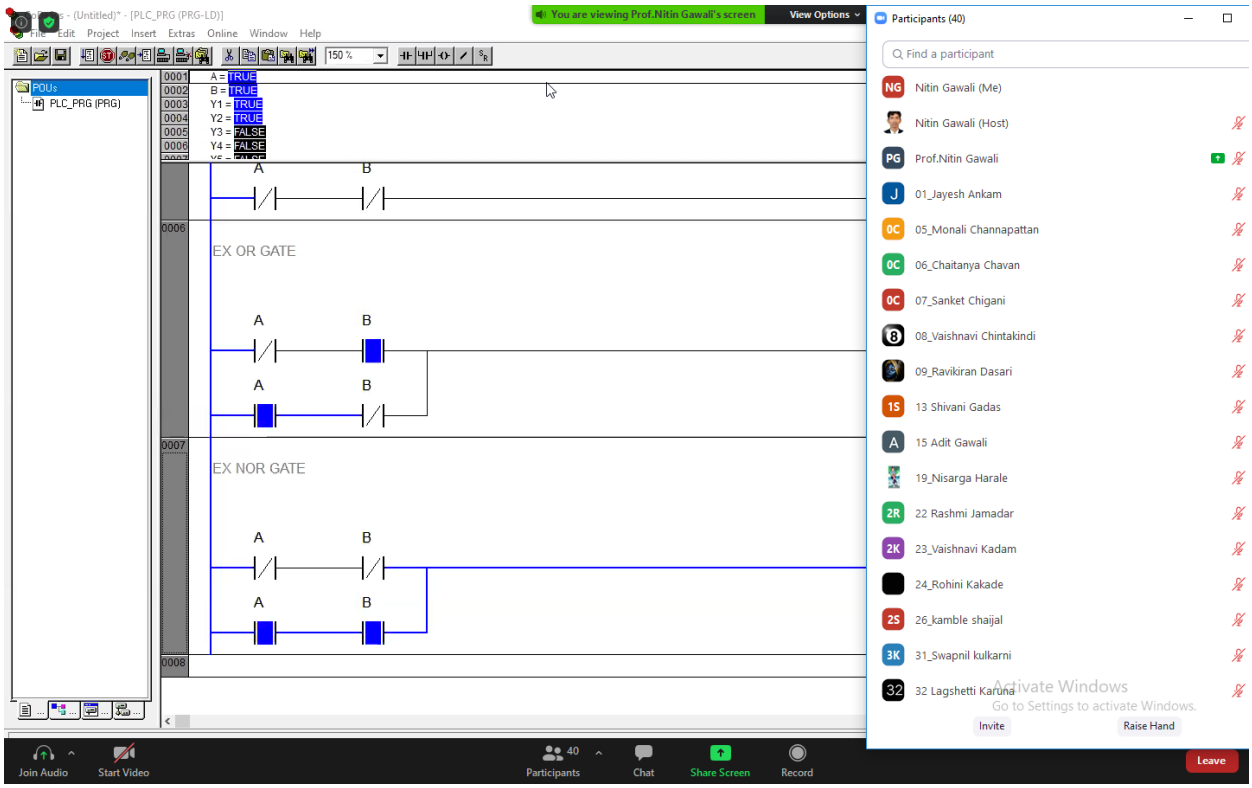


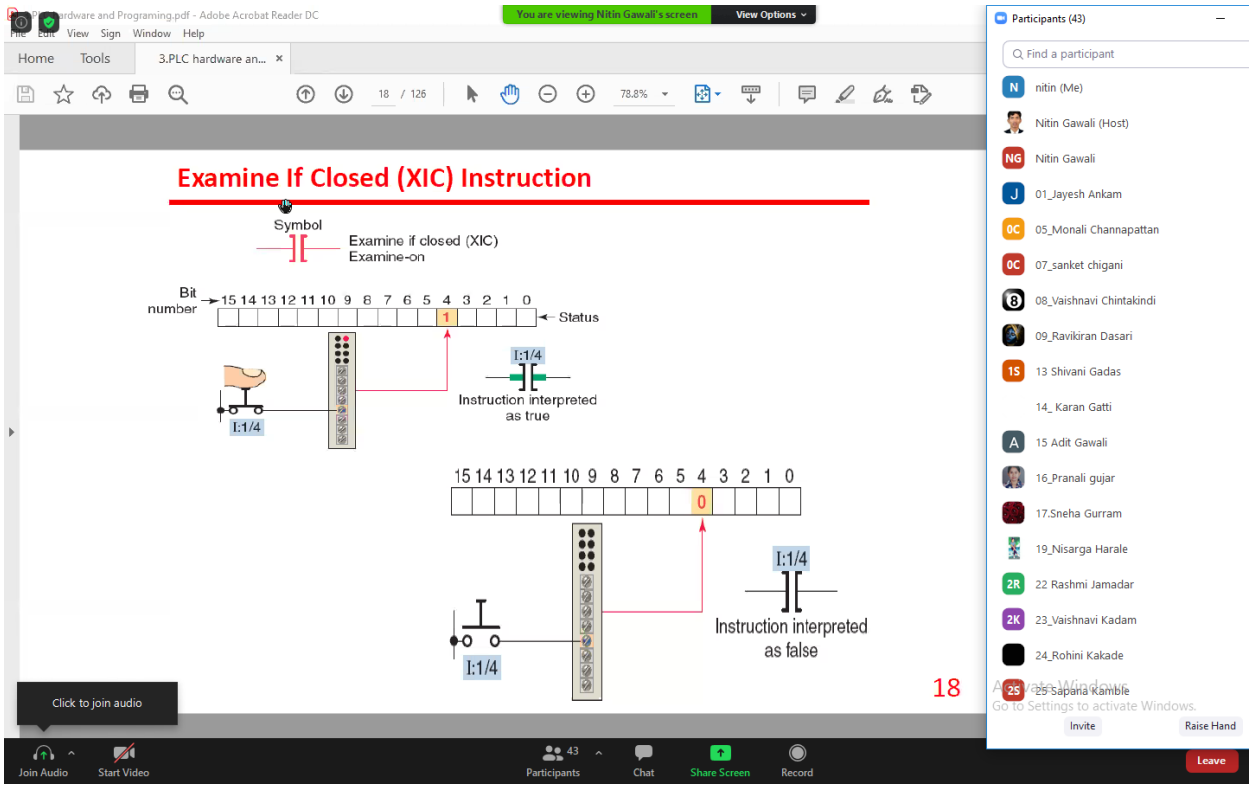



You are viewing Prof.Nitin Gawali's screen
View Options
Participants (34)
Find a participant
Nitin Gawali (Me)
Nitin Gawali (Host)
Prof.Nitin Gawali
01_Jayesh Ankam
06_Chaitanya Chavan
07_sanket chigani
08_Vaishnavi Chintakindi
09_Ravikiran Dasari
13 Shivani Gadas
15 Adit Gawali
16_Pranali Gujar
22 Rashmi Jamadar
23_Vaishnavi Kadam
24_Rohini Kakade
25 Sapana Kamble
26 kamble shaijal
29_Kherodkar Atharv
31_Swapnil kulkarni
The Sensing Section
This section comprises PB,TS,LS, pressure swit
sensors & so on. These provide input signals. T
are connected to screw terminals of Input modu
Each input terminal has a unique identifier call
input address.
Input Analog Devices.
1. Potentiometer
2. LVDT
3. Thermocouple
Input On/OFF Switching
SPST,SPDT,DPST
Pushbutton
Limit Switches
Pressure Switches
Level Switches
Liquid Switches
Hall Devices
Photoelectrical Systems
Inductive Sensitive Switches
Magnetic Sensitive Switches
Activate Windows
Go to Settings to activate Windows.
Invite
Raise Hand
Join Audio
Start Video
Participants
Chat
Share Screen
Record
Leave


Zoom Meeting
You are viewing Prof.Nitin Gawali's screen
View Options
Input Module
Zoom Ratio
100%(Original Size)
Request Remote Control
Annotate
Mute Prof.Nitin Gawali Shared Sound
Follow Presenter's Pointer
Participants (34)
Find a participant
Nitin Gawali (Me)
Nitin Gawali (Host)
Prof.Nitin Gawali
01_Jayesh Ankam
05_Monali Channapattan
06_Chaitanya Chavan
07_Sanket Chigani
08_Vaishnavi Chintakindi
09_Ravikiran Dasari
13 Shivani Gadas
15 Adit Gawali
16_Pranali Gujar
22 Rashmi Jamadar
23_Vaishnavi Kadam
24_Rohini Kakade
25 Sapana Kamble
26 kamble shaijal
INPUT
Field Voltage
(120 Volt Limit Switch)
Logic Levels
(5 Volt DC)
Activate Windows
Go to Settings to activate Windows.
Invite
Raise Hand
Type here to search
ENG
14:42
13-01-2021


Discrete AC Single Input Module
Input Module
Terminal Strip
PB
Fuse
L1
R1
Filter
R2
Bridge
Rectifier
Threshold
Detector
Optical
Isolator
Field Wiring
C
R3
Z_D
Common
L2
Internal Module Circuit


EX OR GATE
EX NOR GATE
A
B


You are viewing Nitin Gawali's screen
View Options
Examine If Closed (XIC) Instruction
Symbol
Examine if closed (XIC)
Examine-on
Bit number
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
Status
I:1/4
Instruction interpreted as true
Instruction interpreted as false
18
Click to join audio
Join Audio
Start Video
Participants
Chat
Share Screen
Record
Leave
Participants (43)
Find a participant
nitin (Me)
Nitin Gawali (Host)
Nitin Gawali
01_Jayesh Ankam
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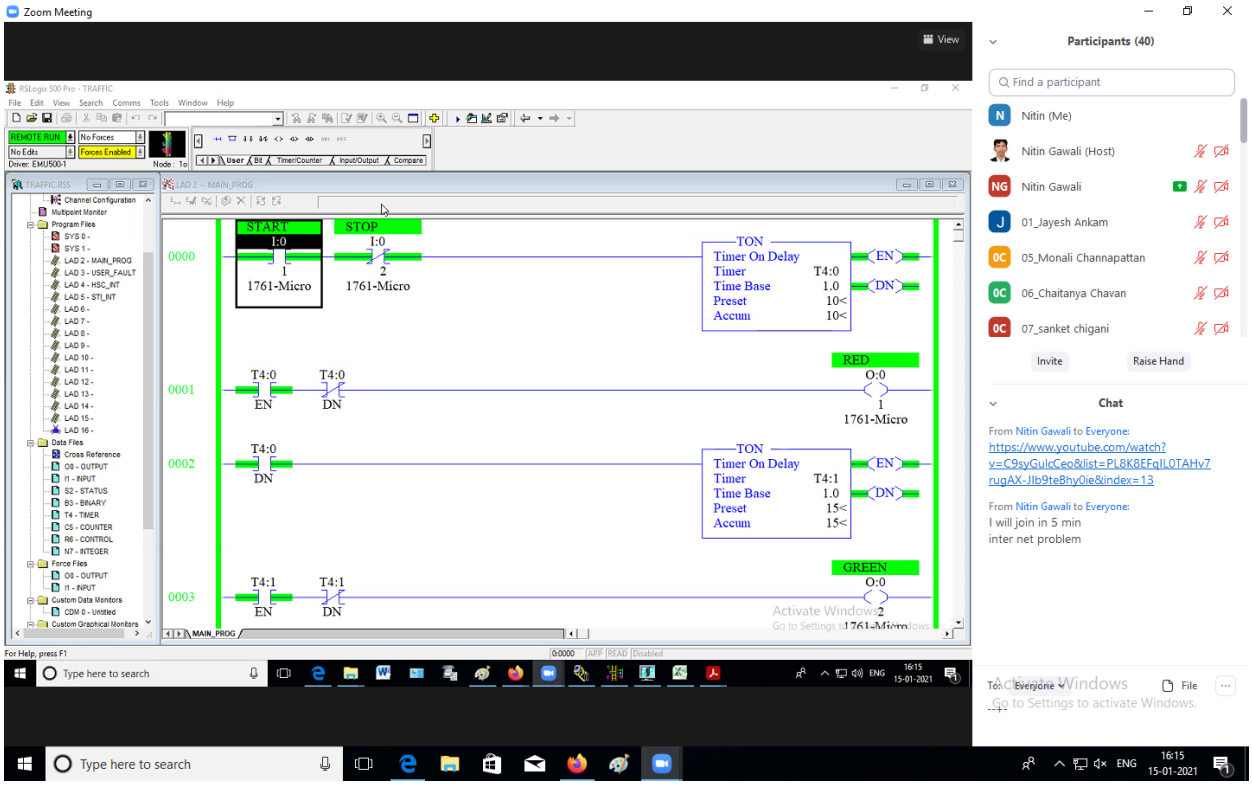
07_sanket chigani
08_Vaishnavi Chintakindi
09_Ravikiran Dasari
13 Shivani Gadas
14_ Karan Gatti
15 Adit Gawali
16_Pranali gujar
17.Sneha Gurram
19_Nisarga Harale
22 Rashmi Jamadar
23_Vaishnavi Kadam
24_Rohini Kakade
Invite
Raise Hand


Zoom Meeting
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Nitin (Me)
Nitin Gawali (Host)
Nitin Gawali
01_Jayesh Ankam
05_Monali Channapattan
06_Chaitanya Chavan
07_sanket chigani
Invite
Raise Hand
Chat
From Nitin Gawali to Everyone:
https://www.youtube.com/watch?v=C9syGulcCeo&list=PL8K8EFqIL0TAHv7rugAX-JIb9teBhy0ie&index=13
From Nitin Gawali to Everyone:
I will join in 5 min
inter net problem
START
STOP
1761-Micro
TON
Timer On Delay
Timer
Time Base
Preset
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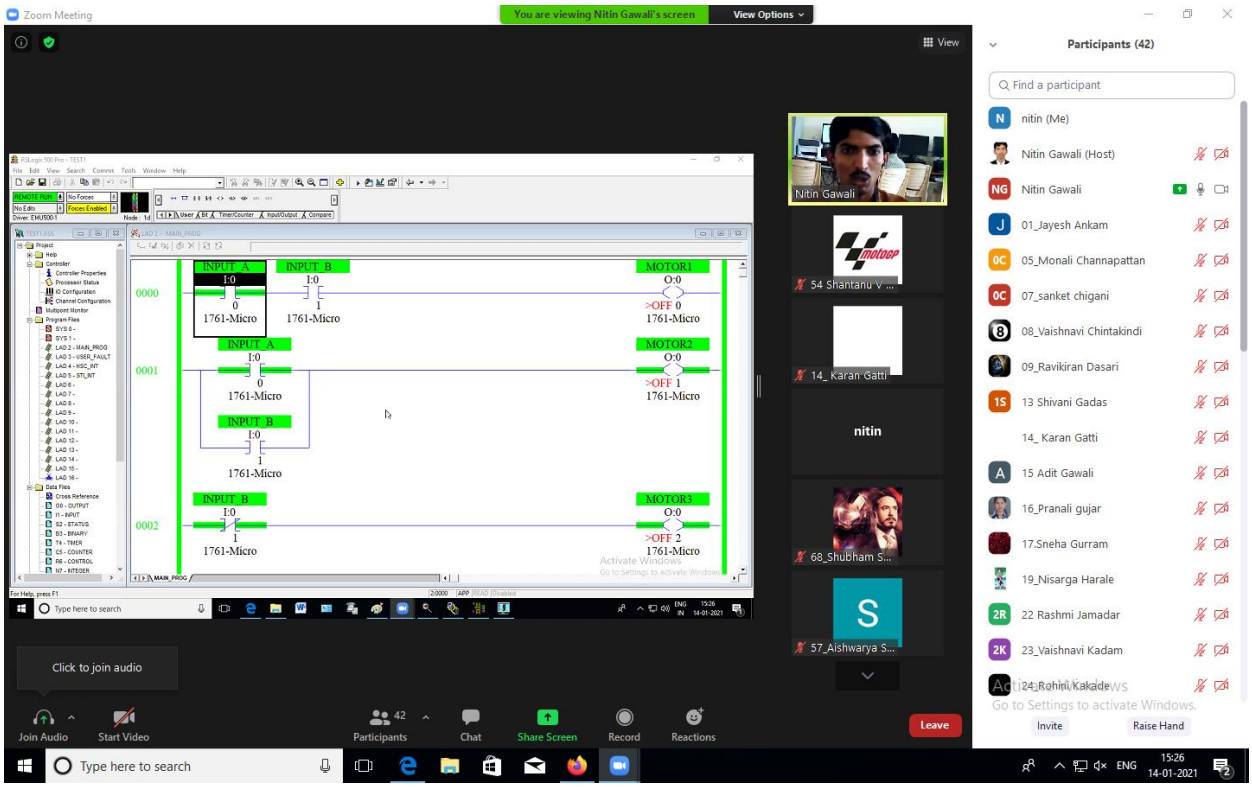
GREEN
Type here to search


Zoom Meeting
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19_Nisarga Harale
22 Rashmi Jamadar
23_Vaishnavi Kadam
24_Rohini Kakade
Invite
Raise Hand
Nitin Gawali
54 Shantanu V ...
14_ Karan Gatti
nitin
68_Shubham S...
57_Aishwarya S...
INPUT_A
INPUT_B
MOTOR1
MOTOR2
MOTOR3
1761-Micro
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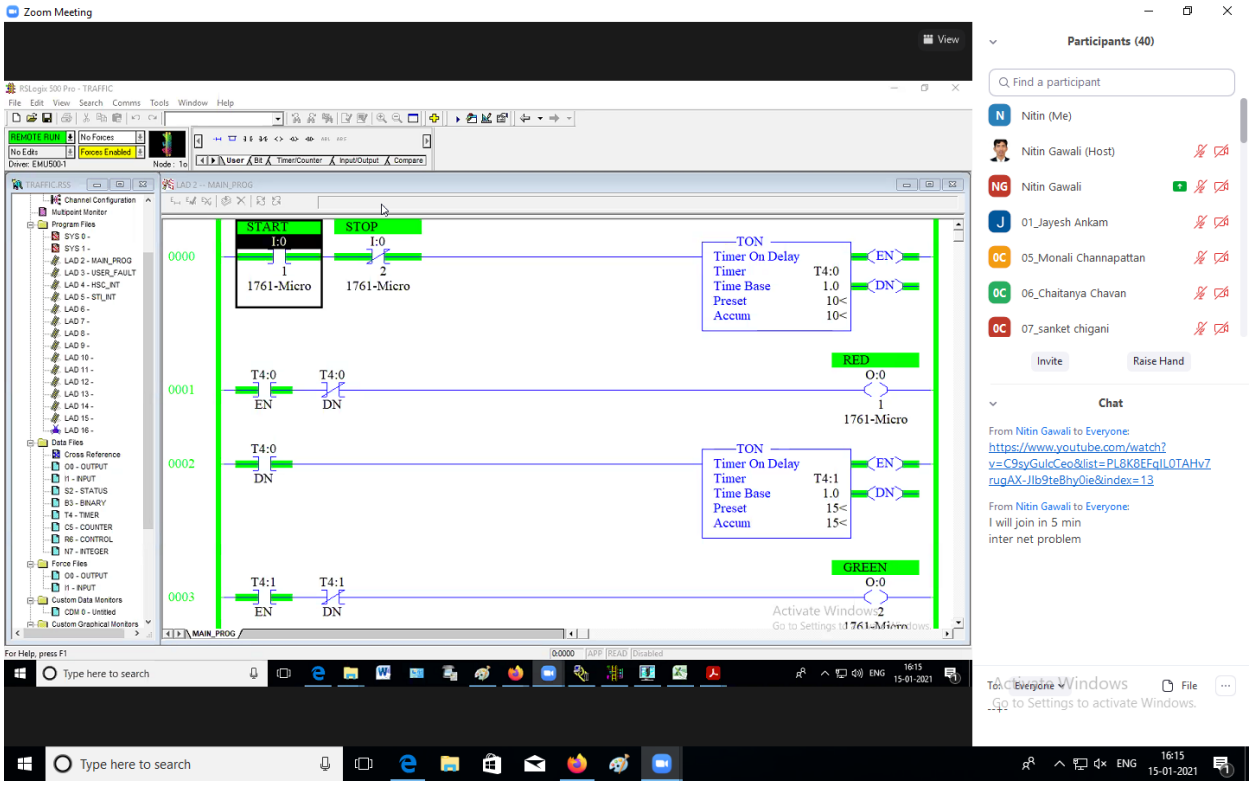
Join Audio
Start Video
Participants
Chat
Share Screen
Record
Reactions
Leave
Type here to search
ENG
15:26
14-01-2021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START
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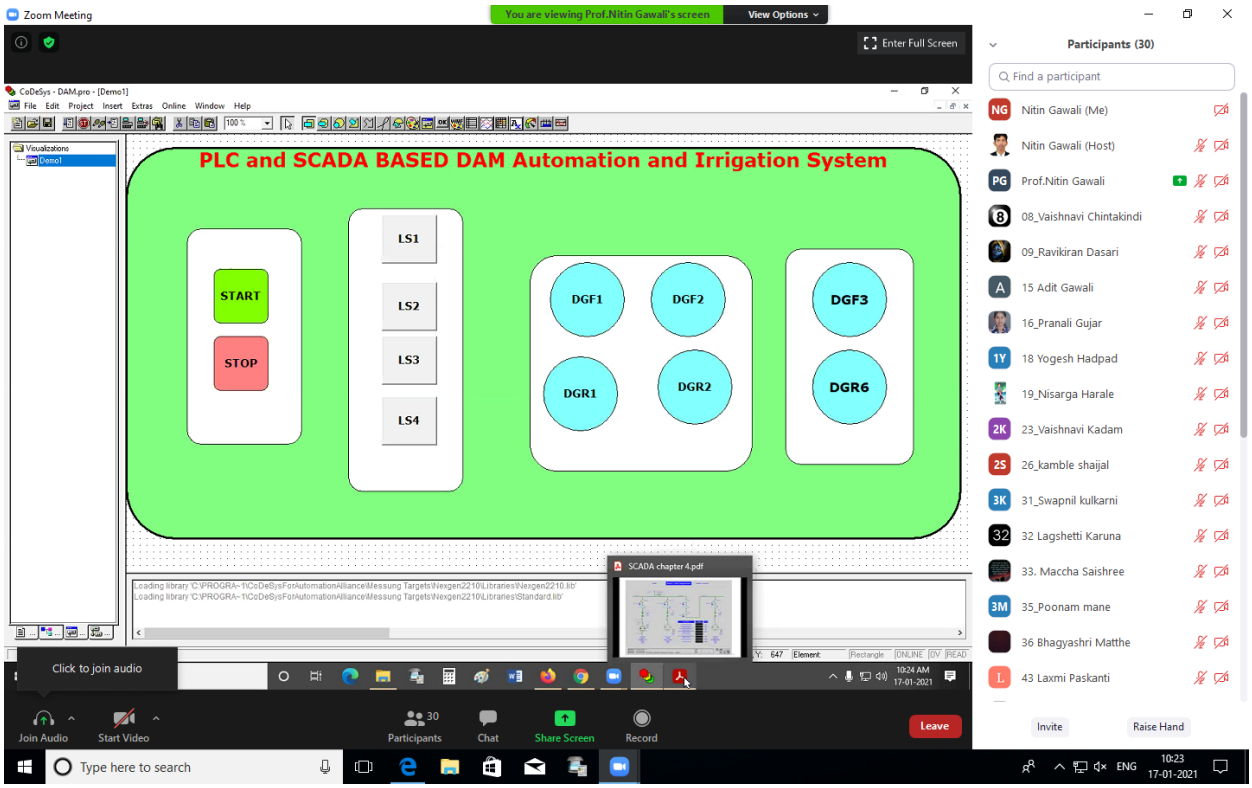
15-01-2021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Enter Full Screen
Participants (30)
Find a participant
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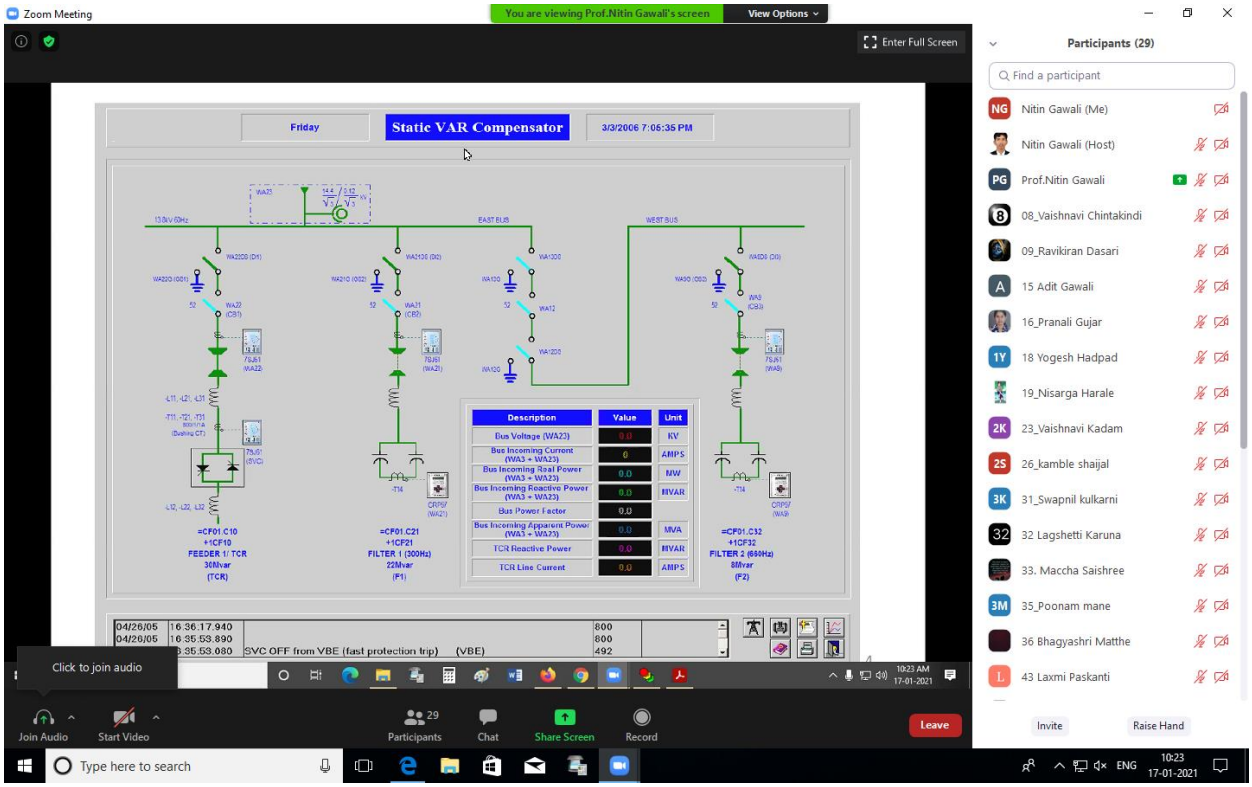
23_Vaishnavi Kadam
26_kamble shaijal
31_Swapnil kulkarni
32 Lagshetti Karuna
33. Maccha Saishree
35_Poonam mane
36 Bhagyashri Matthe
43 Laxmi Paskanti
PLC and SCADA BASED DAM Automation and Irrigation System
START
STOP
LS1
LS2
LS3
LS4
DGF1
DGF2
DGR1
DGR2
DGF3
DGR6
SCADA chapter 4.pdf
Click to join audio
Join Audio
Start Video
Participants
Chat
Share Screen
Record
Leave
Invite
Raise Hand
Type here to search
ENG
10:23
17-01-2021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23_Vaishnavi Kadam
26_kamble shaijal
31_Swapnil kulkarni
32 Lagshetti Karuna
33. Maccha Saishree
35_Poonam mane
36 Bhagyashri Matthe
43 Laxmi Paskanti
Friday
Static VAR Compensator
3/3/2006 7:06:35 PM
EAST BUS
WEST BUS
Description
Value
Unit
Bus Voltage (WA23)
KV
Bus Incoming Current (WA3 + WA23)
AMPS
Bus Incoming Real Power (WA3 + WA23)
MW
Bus Incoming Reactive Power (WA3 + WA23)
MVAR
Bus Power Factor
Bus Incoming Apparent Power (WA3 + WA23)
MVA
TCR Reactive Power
MVAR
TCR Line Current
AMPS
=CF01.C10 +1CF10 FEEDER 1/ TCR 36Mvar (TCR)
=CF01.C21 +1CF21 FILTER 1 (300Hz) 22Mvar (F1)
=CF01.C32 +1CF32 FILTER 2 (690Hz) 8Mvar (F2)
04/26/05 16:36:17.940
04/26/05 16:35:53.890
SVC OFF from VBE (fast protection trip) (VBE)
Click to join audio
Join Audio
Start Video
Participants
Chat
Share Screen
Record
Leave
Invite
Raise Hand
Type here to search
ENG
10:23
17-01-2021

Electrical Engineering Department

Two Week Online Internship on PLC & SCADA

List of Registered Students

Sr.No	Name of the Student
1	Chavan Chaitanya Rupsing
2	Paskanti Venktesh Govardhan
3	Chigani Sanket Shriniwas
4	Soma Ramesh Eknath
5	Gatti Karan Ambadas
6	Kamble Sapana Yallappa
7	Paskanti Laxmi Shrinivas
8	Gawali Adit Ashok
9	Kakade Rohini Ramakant
10	Patil Vaishnavi Anil
11	Kulkarni Swapnil Shripad
12	Shaikh Imran Iliyasahmed
13	Gujar Pranali Raju
14	Nallamandu Madiha Saher Asif Iqbal
15	Shinde Shankar Shamsundar
16	Hadpad Yogesh Pirappa
17	Matthe Bhagyashri Machindra
18	Korampalli Padmashinh Parbhakar
19	Dasari Ravikiran Narendra
20	Potdar Shantanu Vyankatesh
21	Suryawanshi Shubham Dattatray
22	Vanaskar Prashant Gangadhar
23	Chintakindi Vaishnavi Balaji

Sr.No	Name of the Student
24	Lagshetti Karuna Vinayak
25	Tati Namrata Raju
26	Samal Aishwarya Lingraj
27	Harale Nisarga Sanjay
28	Shaikh Namira Ramjan
29	Kadam Vaishnavi Dattatray
30	Kamble Shaijal Udhav
31	Maccha Saishree Rajendra
32	Shaikh Saba Razzaque
33	Shaikh Muskan Ismail
34	Doke Ruthwik Ajay
35	Gurram Sneha Satish
36	Gadas Shivani Satyanarayan
37	Nalawade Vishal Haribhau
38	Jamadar Rashmi Vijay
39	Sayyed Alisha Yunus
40	Mergu Ganesh Govardhan
41	Ankam Jayesh Amit
42	Channapattan Monali Narendra
43	Mane Poonam Prakash
44	Jadhav Aniket
45	Patil Pratikasha Prakash
46	Tambake Gururaj Suryakant
47	Patil Anjali Gangadhar
48	Patil Amruta Balasaheb
49	Sagar Vaishnavi Nitinchandra

Sr.No	Name of the Student
50	Shirwar Abhishek Mallikarjun
51	Kherodkar Atharv Prashant
52	Mane Akanksha Mahadev
53	Majage Sagar Pandit
54	Kulkarni Vinod Pandurang
55	Swami Kirti Shrishail
56	Yemul Pavankumar Ghanshyam
57	Bable Jayesh Virendrakumar
58	Pawar Aniket Nagnath

Pradnya Niketan Education Society, Pune.

N.K. ORCHID COLLEGE OF ENGINEERING & TECHNOLOGY, SOLAPUR

Department of Electrical Enginerring

Certificate

This is to certify that **Mr. Chavan Chaitanya Rupsing** of **N.K.Orchid College of Engineering & Technology, Solapur** has successfully completed Two Week online Internship on "PLC and SCADA" organized by Electrical Engineering Department, from 11th January 2021 to 23rd January 2021.

(Prof. N.U.Gawali)	**(Prof. D.D.Pawar)**	**(Prof.V.S.Shirwal)**	**(Dr. J. B. Dafedar)**
Resource Person	Coordinator Industrial Training	HOD	Principal