SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Sindalagundu post, Dindigul-624 002, Tamilnadu. Ph: 0451-2448800
(Approved by AICTE, Affiliated to Anna University, Chennai Accredited by NAAC)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Technology Training Programme on Industrial Automation using PLC/SCADA

2022-23 (Even Semester) II Year EEE

(20.02.2023 to 24.02.2023

&

27.02.2023 to 03.03.2023)

Trained by

Spot Light Technology, Dindigul

From

Dr. G.Mohan Babu,
Professor & Head,
Department of Electronics and Electronics Engineering,
SSM Institute of Engineering and Technology,
Dindigul-02

To
The Principal,
SSM Institute of Engineering and Technology,
Dindigul-02

Respected Sir,
Sub: Requesting Approval of conducting **Technological Teaching** for II Year EEE Students-Reg

The **Department of EEE** has planned to conduct Technological Teaching for Second Students on "Training on Industrial Automation using PLC/SCADA" which is scheduled to be conducted on the month of February 2023. In this regard, I request your permission to conduct this training on the scheduled month. The quotation details, syllabus and Training Schedule are attached with this letter. Kindly do the needful sir.

Name of the Technological Training	Name of the Company	Total Number of Students	No of Hours	Date	Amount	Coordinator/Faculty in Charges
Training on Industrial Automation using PLC/SCADA	SPOTLIGHT TECHNOLOGY, Dindigul.	51	60	20.02.23 to 24.03.23, 27.02.23 To 03.03.23	76500 Rs. ~~1,02,000~~	Mr.T.Arulkumar, AP / EEE Mr.P.Siva Subramanian, AP/EEE Mr.D.Manoj, AP/EEE

Resource Person Details:
Mr. A. Stephen Gaspar, Managing Director, Spotlight Technology, Dindigul.

Note: Training Cost will be settled to the company two days before the end of training

Thanking you.

Yours faithfully

(Dr.G.Mohan Babu)

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu (Po),
Palani Road, Dindigul - 624 002.

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Department of Electrical and Electronics Engineering

Organizes

Ten days Technology Training On

" Industrial Automation using PLC / SCADA "

For III year and IV year students of EEE

from (20.02.2023 to 24.02.2023 & 27.02.2023 to 03.03.2023)

Trained by

Spot Light Technology, Dindigul

Co-ordinators	HoD	Principal
Mr.D.Manoj,AP/EEE Mr.P.Siva Subramanian,AP/EEE	Dr.G.Mohanbabu	Dr.D.Senthil kumaran

ALL ARE INVITED

SSM Institute of Engineering and Technology * DINDIGUL-624 002 *

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Principal
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Kuttathupatti Village, Sindalagundu (Po),
Palani Road, Dindigul - 624 002

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Dindigul-Palani Highway, Dindigul-624002

CIRCULAR

17/02/2023

This is to inform that ten days training program on **INDUSTRIAL AUTOMATION USING PLC \ SCADA** is going to conduct for II year EEE students from 20.02.2023 to 24.02.2023, 27.02.2023 to 03.03.2023 by Spot light Technology Dindigul. All the students are informed to attend and enrich your knowledge.

Faculty In-charge

HOD/EEE

Dr.D.SENTHIL KUMARAN, M.E., Ph.D.
Principal
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Palani Road, Dindigul - 624 002

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

TECHNOLOGY TRAINING ON "INDUSTRIAL AUTOMATION USING PLC\SCADA"

ATTENDANCE SHEET

S. No.	Reg no.	Student Name	20.02.23		21.02.23		22.02.23		23.02.23		24.02.23		27.02.23		28.02.23		01.03.23		02.03.23		03.03.23	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
1	922121105001	ABIRAMI G																				
2	922121105003	AISHWARYA M.P																				
3	922121105004	ARCHANA DEVI B																				
4	922121105005	ARUN KUMAR S																				
5	922121105006	BALAMURUGAN M																				
6	922121105007	BALA SUBRAMANIYAN R																				
7	922121105008	BHUVANESWARI G																				
8	922121105009	CATHRIN NISHA M																				
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11	922121105013	DIVYA J																				
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13	922121105015	EZHUMALAI NAGA VISHNU S																				
14	922121105016	GOPI J																				
15	922121105017	HARIHARAN T	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran	T-Hari haran
16	922121105018	JAYASRI S																				
17	922121105020	KALEESWARAN M																				
18	9221211050021	KAMALEE A																				
19	922121105022	KAMILA SAI K																				
20	922121105023	KANYA K																				
21	922121105024	KARTHICK RAJ D																				
22	922121105025	KAVIYA LAKSHMI S																				
23	922121105026	KISHORE N	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK	NK

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24	922121105027	LOKENDRA SOWMIYAN S																				
25	922121105028	MANIKANDAN S																				
26	922121105029	MANIVASAGAN B																				
27	922121105030	MANI VEL G																				
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30	922121105033	MOHAMMED SIDDIQ A																				
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33	922121105036	PRADISH V S																				
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35	922121105038	RAGAVI R																				
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48	922121105052	VEERACHAMY S																				
49	922121105301	SALAMON VINCENT RAJ R																				
50	922121105302	YUDISH M																				
51	922121105303	YUVARAJ T																				

Faculty Incharge

HoD/EEE

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Principal

SPOTLIGHT
BRIGHTEN YOUR CAREER

FACULTYNAME: STEPHEN GASPAR A **COURSE: PLC & SCADA**

SYLLABUS
➢ Introduction ➢ Industrial Automation
➢ PLC ➢ About PLC & Brands
➢ programming methods in PLC ➢ Ladder Logic Diagram ➢ Functional Block Diagram ➢ Structured Text ➢ Flow Chart
➢ Programming exercise
➢ Introduction to cx-programmersoftware ➢ Tools in software
➢ Implementing programs in software ➢ Simulation ➢ Practical session
➢ PLC o Generate PLC Layout Modules o PLC parametric selection o Module layout o Insert PLC modules o Edit PLC module PLC Database File
➢ SCADA Introduction o Designing the layout
➢ Library ➢ Alarm ➢ Trends ➢ Recipe ➢ ODBC ➢ OLE
➢ Project Kit training PLC with SCADA linking

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Dindigul – Palani Highway, Dindigul 624 002

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Value added Course Summary (2022-2023)

Course Name : Industrial Automation using PLC /SCADA

Course Duration : 60 Hours

Year offered : II year students -2022-2023

Course Instructors : Mr. D. Manoj
Assistant professor /EEE

Course Outcome: The students gained knowledge about PLC/SCADA. They did simulation and layout modules. They did project using this software.

Course Type : Self Framed / Collaboration with Industry

Assessment Mode

Attendance : 60 Hours

Number of participants : 51

Scheme of Exam : MCQ offline

Course Coordinator

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Palani Road, Dindigul 62

HoD

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Summary Report

The department of Electrical and Electronics Engineering, SSM Institute of Engineering and Technology conducted **Technology training on Industrial Automation using PLC/SCADA** ,from 20th February 2023 to 24th February 2023 and 27th February 2023 to 3rd March. The course covered topics including Industrial Automation consists of an array of elements, which are well synchronized with each other. It performs functions such as controlling, sensing, supervision and monitoring of industrial processes. Functionally, industrial automation includes field-level (Sensors & Actuators), Control level, Supervisory, production control level (**SCADA**) and Information & enterprise level (MES & ERP). Students have attended assessment tests at the end of the course and certificates were issued. The students from second year EEE attended the course and got benefitted.

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Dindigul – Palani Highway, Dindigul 624 002

Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL AUTOMATION USING PLC/SCADA

PLC/SCADA MULTIPLE CHOICE QUESTION

Name of the student:
Year/sem :
Date:

1. The acronym PLC stands for
   a) Pressure Load Control
   b) Programmable Logic Controller
   c) Pneumatic Logic Capstan
   d) PID Loop Controller
2. In PLC programming, a retentive function is one that
   a) Defaults to the "on" state
   b) Is not reset after a power cycle
   c) Defaults to the "off" state
   d) Cannot be edited or deleted
3. A good application for a timed interrupt in a PLC program would be
   a) A communications function block
   b) A PID function block
   c) A math function block
   d) A motor start/stop rung
4. In a PLC, the scan time refers to the amount of time in which
   a) the technician enters the program
   b) timers and counters are indexed by
   c) one "rung" of ladder logic takes to complete
   d) the entire program takes to execute
5. The difference between online and offline PLC programming is
   a) whether the PLC is running or stopped
   b) whether the programming PC has internet connectivity
   c) the type of programming cable used
   d) where the edited program resides
6. Ladder logic programming consists primarily of
   a) Virtual relay contacts and coils
   b) Logic gate symbols with connecting lines
   c) Function blocks with connecting lines
   d) Text-based code
7. An OR function implemented in ladder logic uses
   a) Normally-closed contacts in series
   b) Normally-open contacts in series
   c) A single normally-closed contact
   d) Normally-open contacts in parallel

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8. What is the largest integer number that a PLC counter function can reach if it uses a 16 bit register?
   a) 32,768
   b) 65,535
   c) 65,536
   d) 65,537
9. The part that monitors the inputs and makes decisions in a PLC is the CPU.
   a) True
   b) False
10. In a PLC "I" is used for output and "Q" is used for input
   a) True
   b) False
11. To increase the number of inputs and outputs of the PLC, one can use expansion modules.
   a) True
   b) False
12. An example of discrete (digital) control is
   a) Varying the volume of a music system
   b) Turning a lamp ON or OFF
   c) Varying the brightness of a lamp
   d) Controlling the speed of a fan
13. The _____ is moved toward the relay electromagnet when the relay is on.
   a) Armature
   b) Coil
   c) NO contact
   d) NC contact
14. Which of the following RLL applications is not normally performed in early automation systems?
   a) On/off control of field devices
   b) Logical control of discrete devices
   c) On/off control of motor starters
   d) Proportional control of field devices
15. When a relay is NOT energized
   a) There is an electrical path through the NO contacts
   b) There is an electrical path through the NC contacts
   c) Neither the NO or the NC contacts have an electrical path
   d) Both the NO and the NC contacts have an electrical path
16. How many levels does complex SCADA system have?
   a)One
   b)Three
   c)Four
   d)Two
17. The functions of the SCADA systems performed by using _____
   a) Remote telemetry units
   b) SCADA master units
   c) Sensors, communication network
   d) All of the above
18. Where SCADA can be used?
   a) Mass transit
   b) Traffic signals
   c) Manufacturing
   d) All of above

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19. The SCADA system performs _____
    a) Data acquisition
    b) Data presentation
    c) Networked data communication
    d) All of the above
20. _____ is not a component of SCADA system
    a) Database server
    b) Sparger controller
    c) Output system
    d) None of the above
21. What is the standard form of RAID?
    a) Redundant Array of Independent Disks
    b) Reverse Array of Independent Disks
    c) Random Array of Independent Disks
    d) Reduced Array of Independent Disks
22. The standard form of MMI is_____
    a) Master Machine Interface
    b) Main Machine Interface
    c) Man Machine Interface
    d) None of the above
23. The RAID level 50 is a combination of _____
    a) RAID 5 and RAID 0
    b) RAID 3 and RAID 0
    c) RAID 1 and RAID 0
    d) None of the above
24. What are the types of SCADA systems?
    a) Monolithic, Networked
    b) Monolithic, Distributed, Networked
    c) Monolithic, Distributed
    d) All of above
25. The Redundant Array of Independent Disk is used for _____
    a) Improvement of reliability
    b) Improvement of performance
    c) All of above
    d) None of above

Institute of Engineering and Technology SSM DINDIGUL-624 002

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

TECHNOLOGY TRAINING ON "INDUSTRIAL AUTOMATION USING PLC\SCADA"

MARK SHEET

S. No.	Reg.no.	Student Name	MARK
1	922121105001	ABIRAMI G	14
2	922121105003	AISHWARYA M.P	19
3	922121105004	ARCHANA DEVI B	13
4	922121105005	ARUN KUMAR S	11
5	922121105006	BALAMURUGAN M	12
6	922121105007	BALA SUBRAMANIYAN R	13
7	922121105008	BHUVANESWARI G	15
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10	922112105011	DEENA DHAYALAN P A	10
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19	922121105022	KAMILA SAI K	18
20	922121105023	KANYA K	17
21	922121105024	KARTHICK RAJ D	10
22	922121105025	KAVIYA LAKSHMI S	08
24	922121105027	LOKENDRA SOWMIYAN S	12
25	922121105028	MANIKANDAN S	18
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28	922121105031	MANOJKUMAR A	15
29	922121105032	MINIPRIYA K	16
30	922121105033	MOHAMMED SIDDIQ A	12
31	922121105034	NARMATHA DEVI P	11
32	922121105035	PONRAJ R	10
33	922121105036	PRADISH V S	13

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34	922121105037	PRIYA DHARSHINI J	04
35	922121105038	RAGAVI R	12
36	922121105039	RAJESHWARI J	13
37	922121105041	REETHANA M	10
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48	922121105052	VEERACHAMY S	12
49	922121105301	SALAMON VINCENT RAJ R	16
50	922121105302	YUDISH M	11
51	922121105303	YUVARAJ T	10

Faculty Incharge

HOD/EEE

PRINCIPAL

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Department of Electrical and Electronics Engineering

12

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL AUTOMATION USING PLC/SCADA

PLC/SCADA MULTIPLE CHOICE QUESTION

Name of the student: Divya. J
Year/sem : II - 3
Date: 03-3-2023

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    b) RAID 3 and RAID 0
    c) RAID 1 and RAID 0
    d) None of the above
24. What are the types of SCADA systems?
    a) Monolithic, Networked
    b) Monolithic, Distributed, Networked
    c) Monolithic, Distributed
    d) All of above
25. The Redundant Array of Independent Disk is used for _____
    a) Improvement of reliability
    b) Improvement of performance
    c) All of above
    d) None of above

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Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL AUTOMATION USING PLC/SCADA

PLC/SCADA MULTIPLE CHOICE QUESTION

Name of the student: Lokendra Sowmiyan
Year/sem : II
Date: 03-03-2023

1. The acronym PLC stands for
   a) Pressure Load Control
   b) Programmable Logic Controller
   c) Pneumatic Logic Capstan
   d) PID Loop Controller
2. In PLC programming, a retentive function is one that
   a) Defaults to the "on" state
   b) Is not reset after a power cycle
   c) Defaults to the "off" state
   d) Cannot be edited or deleted
3. A good application for a timed interrupt in a PLC program would be
   a) A communications function block
   b) A PID function block
   c) A math function block
   d) A motor start/stop rung
4. In a PLC, the scan time refers to the amount of time in which
   a) the technician enters the program
   b) timers and counters are indexed by
   c) one "rung" of ladder logic takes to complete
   d) the entire program takes to execute
5. The difference between online and offline PLC programming is
   a) whether the PLC is running or stopped
   b) whether the programming PC has internet connectivity
   c) the type of programming cable used
   d) where the edited program resides
6. Ladder logic programming consists primarily of
   a) Virtual relay contacts and coils
   b) Logic gate symbols with connecting lines
   c) Function blocks with connecting lines
   d) Text-based code
7. An OR function implemented in ladder logic uses
   a) Normally-closed contacts in series
   b) Normally-open contacts in series
   c) A single normally-closed contact
   d) Normally-open contacts in parallel

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8. What is the largest integer number that a PLC counter function can reach if it uses a 16 bit register?
   a) 32,768
   b) 65,535
   c) 65,536
   d) 65,537

9. The part that monitors the inputs and makes decisions in a PLC is the CPU.
   a) True
   b) False

10. In a PLC "I" is used for output and "Q" is used for input
   a) True
   b) False

11. To increase the number of inputs and outputs of the PLC, one can use expansion modules.
   a) True
   b) False

12. An example of discrete (digital) control is
   a) Varying the volume of a music system
   b) Turning a lamp ON or OFF
   c) Varying the brightness of a lamp
   d) Controlling the speed of a fan

13. The _____ is moved toward the relay electromagnet when the relay is on.
   a) Armature
   b) Coil
   c) NO contact
   d) NC contact

14. Which of the following RLL applications is not normally performed in early automation systems?
   a) On/off control of field devices
   b) Logical control of discrete devices
   c) On/off control of motor starters
   d) Proportional control of field devices

15. When a relay is NOT energized
   a) There is an electrical path through the NO contacts
   b) There is an electrical path through the NC contacts
   c) Neither the NO or the NC contacts have an electrical path
   d) Both the NO and the NC contacts have an electrical path

16. How many levels does complex SCADA system have?
   a) One
   b) Three
   c) Four
   d) Two

17. The functions of the SCADA systems performed by using _____
   a) Remote telemetry units
   b) SCADA master units
   c) Sensors, communication network
   d) All of the above

18. Where SCADA can be used?
   a) Mass transit
   b) Traffic signals
   c) Manufacturing
   d) All of above

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19. The SCADA system performs _____
    a) Data acquisition
    b) Data presentation
    c) Networked data communication
    d) All of the above
20. _____ is not a component of SCADA system
    a) Database server
    b) Sparger controller
    c) Output system
    d) None of the above
21. What is the standard form of RAID?
    a) Redundant Array of Independent Disks
    b) Reverse Array of Independent Disks
    c) Random Array of Independent Disks
    d) Reduced Array of Independent Disks
22. The standard form of MMI is_____
    a) Master Machine Interface
    b) Main Machine Interface
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    d) None of the above
23. The RAID level 50 is a combination of _____
    a) RAID 5 and RAID 0
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Department of Electrical and Electronics Engineering

19

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL AUTOMATION USING PLC/SCADA

PLC/SCADA MULTIPLE CHOICE QUESTION

Name of the student: Aishwarya M.P
Year/sem : II
Date: 03-03-2023

1. The acronym PLC stands for
   a) Pressure Load Control
   b) Programmable Logic Controller
   c) Pneumatic Logic Capstan
   d) PID Loop Controller
2. In PLC programming, a retentive function is one that
   a) Defaults to the "on" state
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3. A good application for a timed interrupt in a PLC program would be
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Palani Road, Dindigul 624

8. What is the largest integer number that a PLC counter function can reach if it uses a 16 bit register?
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10. In a PLC "I" is used for output and "Q" is used for input
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TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL AUTOMATION USING PLC/SCADA

PLC/SCADA MULTIPLE CHOICE QUESTION

Name of the student: S. Manikandan
Year/sem : II
Date: 02-03-23

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Department of Electrical and Electronics Engineering

STUDENT FEEDBACK FORM

Name of the Student: VANAJA . G

Year/Sem: II | IV

Date: 03.03.23

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content	✓				
2	Skill development		✓			
3	Motivation			✓		
4	Regularity and punctuality of trainer		✓			
5	Coverage of syllabus			✓		
6	Interaction		✓			
7	Individual attention	✓				
8	Outcome		✓			
9	Other suggestions			✓		

Faculty incharge

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HoD/EEE

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Department of Electrical and Electronics Engineering

STUDENT FEEDBACK FORM

Name of the Student: Domnic Seaplan Raj . A

Year/Sem: 2023 | IV

Date: 3.3.23

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content	✓				
2	Skill development		✓			
3	Motivation		✓			
4	Regularity and punctuality of trainer			✓		
5	Coverage of syllabus		✓			
6	Interaction		✓			
7	Individual attention			✓		
8	Outcome		✓			
9	Other suggestions			✓		

Faculty incharge

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STUDENT FEEDBACK FORM

Name of the Student: Arun Kumar.

Year/Sem: II / IV

Date: 03/03/23

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content	✓				
2	Skill development		✓			
3	Motivation		✓			
4	Regularity and punctuality of trainer	✓				
5	Coverage of syllabus		✓			
6	Interaction		✓			
7	Individual attention	✓				
8	Outcome		✓			
9	Other suggestions	—				

Faculty incharge

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Department of Electrical and Electronics Engineering

STUDENT FEEDBACK FORM

Name of the Student: Kathein Nisha

Year/Sem: II / IV

Date: 03/03/23

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content		✓			
2	Skill development	✓				
3	Motivation			✓		
4	Regularity and punctuality of trainer		✓			
5	Coverage of syllabus	✓				
6	Interaction		✓			
7	Individual attention			✓		
8	Outcome		✓			
9	Other suggestions	-		-		

Faculty incharge

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CERTIFICATE OF PARTICIPATION

This is Certify That Mr/Mrs CELIN JAYAMARY A

of II EEE has actively participated in

"COURSE ON PLC/SCADA-60 HOURS"

organised by

Department of Electrical and Electronics Engineering

Date:10/03/2023

Venue:PSS LAB, SSM IET

CENTRE HEAD
STEPHEN GASPAR A

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Dr.G.MOHAN BABU

PRINCIPAL
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of II EEE has actively participated in

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Date:10/03/2023

Venue:PSS LAB, SSM IET

CENTRE HEAD
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This is Certify That Mr/Mrs BHUVANESWARI G

of II EEE has actively participated in

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STEPHEN GASPAR A

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CERTIFICATE OF PARTICIPATION

This is Certify That Mr/Mrs HARIHARAN T

of II EEE has actively participated in

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Date:10/03/2023

Venue:PSS LAB, SSM IET

CENTRE HEAD
STEPHEN GASPAR A

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CERTIFICATE OF PARTICIPATION

This is Certify That Mr/Mrs EZHUMALAI NAGA VISHNU S
of II EEE has actively participated in
"COURSE ON PLC/SCADA-60 HOURS"
organised by
Department of Electrical and Electronics Engineering

Date:10/03/2023

Venue:PSS LAB, SSM IET

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