

Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 1

CURRICULAR ASPECTS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL INDRA GANESAN COLLEGE OF ENGINEERING





DEPARTMENT OF ELECTRICAL AND ELECTRINICE ENGINEERING

ACADEMIC YEAR 2021-2022 / EVEN SEMESTER

1.2 Academic Flexibility (30)

1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

AND

1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

VAC Title:	Auton	natior	using PLC an	d S	CADA						
Resource Per	rson:		Dr.M.Aravit Design Engir Sri Sai Softw	ieer	*						
Date of cond	uct fro	m:	01.08.2022		To:	0	5.08.2022		Duration:	30 Hours	
Organized D	epartm	ent:	ELECTRICA	LA	ND EI	LE	CTRINIC	CE EN	GINEERIN	\mathbf{G}	
Participant Y	Year:	EEE	- IV, III, II	Se	mester	:	EVEN	No.	of Students I	Registered:	38
Venue: El	EE III y	yr Cla	ssroom, IGCE.	•							

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Department of Electrical and Electronics Engineering

Academic Year 2021-2022 - Even Semester

27.07.2022

DEPARTMENT CIRCULAR

Department of Electrical and Electronics Engineering and IQAC of IGCE in association with Sri Sai Software is going to organize Value Added Course for all Second, Third and Final year students on "Automation using PLC and SCADA" from 01.08.2022 to 05.08.2022. Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in our campus.

Resource Person Detail	Dr.M.Aravith, Design Engineer, Sri Sai Software.
Venue	EEE III yr Classroom, IGCE

Principal

Cc:

- Principal office
- IQAC Co-Ordinator
- Class In charges II, III & IV-Year
- II, III & IV-Year EEE Students
- Office File
- Notice Board

Dr. G. Balakrishnan, M.E., Ph.D., Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012.



Indra Ganesan COLLEGE OF ENGINEERING Mackeral Main Road (NH-458) Manikandare Tranking and St. School



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Value Added Course

"Automation using PLC and SCADA"

SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	Introduction to PLC	3	01.08.2022
2	Architecture PLC Block diagram	3	01.08.2022
3	PLC Hardware	3	02.08.2022
4	Interfacing Instruction set, Ladder login for applications	3	02.08.2022
5	PLC programming and applications	3	03.08.2022
6	Timer, counter, Arithmetic operations, Data handling instructions.	3	03.08.2022
7	Introduction to SCADA	3	04.08.2022
8	Architecture, Block diagram of SCADA.	3	04.08.2022
9	Types and Application of SCADA.	3	05.08.2022
10	Interfacing of SCADA with PLC.	3	05.08.2022
11	Exam	1	05.08.2022
	Total Hours(Excluding Exam)	30	and the same additional and the same and the

VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012.

Gr. Ma Latter

HOD/EEE



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Value Added Course

Dr. G. Balakrishnan, M.E., Ph.D.,

"Automation using PLC and SCADA"

Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Road

STUDENTS PARTICIPATION LIST

Manikandam, TrichyF	S.NO		WY A TA AFTER	DEPARTMENT
Page 1	1	811218105001	ARUN PRAVEEN RAJ A	IV/EEE
	2	811218105002	HARIHARAN M	IV/EEE
	3	811218105003	INBARAJ A	IV/EEE
	4	811218105004	JEYA STEPHEN S	IV/EEE
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	6	811218105006	PADMANABAN A	IV/EEE
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1	2 1	811219105003	A.MANIKANDAN	III/EEE
1	3 8	311219105005	C.PONNALAGU	III/EEE
1	4 8	11219105006	A.SALAMON	III/EEE
1:	5 8	11219105007	M.SARAVANAKUMAR	III/EEE
10	5 8	11219105008	K.SOLAIMATHI	III/EEE
17	7 8	13919105001	P.DHEVENTHIRAN	III/EEE
18	8	11219105301	A. VENKATRAMAN	III/EEE
19	1	311220105001	ABINESH T	WEEE !
20	8	311220105002	ALEX IMMANVEL S	II/EEE
21	8	11220105006	BALAMURUGAN A	II/EEE



Indra Ganesan

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27	81122	0105023	MOHANDOSS S	II/EEE
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30			SANTHIYA A	II/EEE
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32	8112201	05037	SNEKA T	II/EEE
33	8112201	05038	SOPHIYA K	II/EEE
34	8112201	05301	AARTHI S	II/EEE
5	81122010	05303	THIRUNAVUKARASU M	II/EEE
6	811220105305 VE		VENKATESHWARAN.A	II/EEE
7	81122010	5306	DIVYA BHARATHI	II/EEE
3	81122010	5307	SATHEESH KUMAR	II/EEE

VAC coordinator

10.

Gr. Ma lath

Dr. G. Balakrishnan, M.E., Ph.D.,



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Department of Electrical and Electronics Engineering

Academic Year 2021-2022 - Even Semester

STUDENTS ATTENDANCE LIST

Value Added Course

"Automation using PLC and SCADA"

Dr. G. Balakrishnan, M.E., Ph.D.,

													IVIGIII	Kandam, Inchy	-02U U12.
S.NO	Register Number	NAME	YEAR/	01.08	3.2022	02.08	.2022	03.08	.2022	04.08	3.2022	05.08	8.2022	NO OF	SIGN
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15	811219105007	M.SARAVANAKUMAR	III/EEE			~	a	V	i	V	1		/	9	Saram
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23	811220105013	GAYATHRI M	II/EEE	V	V	~	~	V	1	1	- 0	- ~	/	10	gayan
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Dr. G. Balakrishnan, M.E., Ph.D., Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012.



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Dr. G. Balakrishnan, M.E., Ph.D.,



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Name of the Student:

Year/Sem:

Manikandam, Trichy-620 012.

AU Register Number:

9)

Value Added Course

"Automation using PLC and SCADA"

		MULTIPLE C	HOICE QUE	STIONS (25X1 = 25	Marks)
1)	Which is the first				
	1. PLC 086	2.PLC 085	3.PLC 084	4.None	
2) I	How many operat	ion steps does t	he programma	able logic controller	have 9
			. 6	- regre toutioner	uave?
	. Two	2.One	3.Four		
3) Ii	n PLC operation	ch	ecks the statu	s at the input side	
1	. Program scan	2.Output scan	3.Input scan	4.None	
4) T	he components th	at make PLC v	vorks can be d	ivided into	ADMA AMAAA
1.				attinophilips — accordances	core areas
1.	1 WO	2.One	3.Four	4. Three	
5) In	PLC operation _	ret	rieves the data	into an output mod	ule
1.	Output scan	2.Input	scan	3.Program scan	4. None of the above
6) Bei	fore PLC's was cr	eated many inc	lustries used _		
1.				4.None of the above	
7) Wh	at are the types o	f programmabl	e logic control	lers?	
1. 3.	Modular, uniform P		2.Fixed and Mo 4.None of the al		
8) Whe	invented the Pro	grammable Lo	gic Controller	(PLC)?	
1.				(-25).	10.
3.	Dick Morley Thomas Davenpor			1	()P
	Thomas Davenpor	4.None of	f the above		
9) In m	ıodular programı	nable logic cont	troller	Dr. G. Bala	krishnan, M.E., Ph.D.,
1.	Output is fixed All of above	2.Input is 4.None of	fixed	Indra Ganesar	College of Engineering



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	10) CCTV cameras is	an example	for	automation	
	1. Office automat	ion	2.6-1		
	3. Industrial auto			ic automation	
				g automation	
1	1) The PLC's can be	programme	d in		
	1. Instruction list,	Functional b	lock diagram	2.Ladd	er logic, structured text
	3. Sequential fund	tion chart		4.All o	f the above
12	2) The programmable	logic contro	ollers are used	in	
	1. Cement manufac	cturing	2 Process o		
	3. Glass and paper	industry	4.All of the	utomation pl	ants
10				40070	
13,) The sequences are c	lassified into	т плее еврато в се напримення выбор передаг .		
	1. One 2	2.Two	3.Three	4.Four	
14)	In modular type PLO	C. the PI C's	omo olonia.	• ,	
				Into	_
	 Transistor output 	PLC	2.Relay outp	ut PLC	
2	2. Triac output PLC		4.All of the a		
15)	In fixed programmat	le logic cont	roller	non.	
1	. Output is fixed	2 Input	ic fixed		
3	. None of the above	4.All of			
16) 7	The advantages of PL	C are	_		
1.	Reliability is high				
2,	Small in size				10
3.	Easy maintenance				
4.	All of the above				
4>					Dr. G. Balakrishnan, M.E., Ph.D.,
17) T	he visual programmii	ng language	also called as		Principal Indra Ganesan College of Engineering
1.	Ladder logic	2.Relay 1	ogic		IG Valley, Madurai Main Road
2.	All of the above	4.Contro			Manikandam, Trichy-620 012.
18) Th	e PLC internally ope	rates, stores	, and calculate	es the value i	n
1.	Decimal format				
3.	Binary format	2.Octal fo 4.None	rmat		



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19 What are the components that make the programmable logic controller work?

1. Power supply

Input and output module

4. All of the above

20) The control in SCADA is

1. Online control

2. Direct control

3. Supervisory control

4. Automatic control

21) When did the SCADA start?

1.1980s

2. 1990s

3. 1970s

4.1960s

22) Which of the following is an example of the SCADA system?

1. Emerson Delta V

2. Honeywell Plant Scape

3. Yokogawa CENTUM

4. Power Studio Deluxe

23) How many levels are present in a complex SCADA system?

1. 3 - Levels

2. 5 - Levels

3.4 - Levels

4.6 - Levels

24) Which of the following is the heart of a SCADA system?

1. PLC

2. HMI

3. Alarm task

4. I/O task

25) Which of the following is not the component of a SCADA system?

1. Database server

2. I/O system

3.PLC controller

4. Sparger controller

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal



Indra Ganesan



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Value Added Course

Automation using PLC and SCADA"

ANSWER KEY

1	3	6	2	11	2	16	4	21	4
2	4	7	2	12	4	17	1	22	4
3	3	8	1	13	3	18	3	23	3
4	3	9	3	14	4	19	4	24	4
5	quand	10	1	15	4	20	3	25	4

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012. VACCoordinator



9) In modular programmable logic controller _

2.Input is fixed

4. None of above

Output is fixed

All of above

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IG Valley, Madurai Main Road Manikandam, Trichy-620 012.

	3,000	e mechanica, v(r) 3	exten inscitution by tic	ic U. X.
Name of the Student: AU Register Numbers	Divya : 81122	bharath 0105300	į , ,	Year/Sem: [] / [[]
	\mathbf{v}	alue Adde	ed Course	
			LC and SCAD	A" [19]
<u>M</u>			TIONS $(25X1 = 2$	///
1) Which is the first P				
1. PLC 086	2.PLC 085	13PLC 084	4.None	
2) How many operatio	n steps does	the programma	ble logic controlle	r have?
1. Two	2.One	Four	4.Three	
3) In PLC operation _	с	hecks the status	s at the input side	
1. Program scan		_		
4) The components tha	it make PLC	works can be d	ivided into	core areas
	2.One	\sim	4.Three	
5) In PLC operation	r	etrieves the data	into an output m	odule
Output scan	2.Inpi	ut scan	3.Program scan	4.None of the above
6) Before PLC's was cro	eated many i	ndustries used _	···	
1. Capacitors	Relays	3.Resistors	4. None of the ab	ove
7) What are the types of	f programma	ble logic contro	llers?	
1. Modular, uniform Fixed, uniform Pl		2.Fixed and M 4.None of the		
8) Who invented the Pro	grammable]	Logic Controlle	r (PLC)?	
 Dick Morley Thomas Davenpor 		s Wenstrom e of the above		Balakrishnan, M.E., Ph.D. Principal Ganesan Call
) In modular programi	nable logic c	ontroller	IG	Ganesan College of Engineering Valley, Madural Main 2



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10) CO	CTV cameras is an exa	mple for	automation
3.	Office automation Industrial automation		itific automation
11) Th	e PLC's can be progra	nmed in	_
1. 3.	Instruction list, Function Character Sequential function ch	_	m (2.1) adder logic, structured text 4.All of the above
12) Th	e programmable logic	controllers are ı	sed in
1. 3.	Cement manufacturing Glass and paper indust		ess automation plants of the above
13) Th	e sequences are classif	ied into	_
1.	One Owo	3.Three	4.Four
14) In	modular type PLC, the	e PLC's are class	rified into
1.	Transistor output PLC Triac output PLC	2.Relay 4.All of	
15) In 1	fixed programmable lo	gic controller _	
1. 3.	Output is fixed None of the above	2.Input is fixed 4.All of above	10
16) The	e advantages of PLC a	re	100
1. 2. 3.	Reliability is high Small in size Easy maintenance All of the above		Dr. G. Balakrishnan, M.E., Ph.D. Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012.
17) The	visual programming	language also cal	lled as
2.) Ladder logic All of the above	2.Relay logic 4.Controller log	ic
18) The	PLC internally opera	tes, stores, and c	alculates the value in
1.	Decimal format Binary format	2.Octal format 4.None	



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19 What are the components that make the programmable logic controller work?

1. Power suppl	ly	2.0	CPU
3. Input and ou	itput module	(A)	Il of the above
20) The control in S	SCADA is		
1. Online control		2. Direct co	ntrol
3. Supervisory contro	lc	4. Automati	c control
21) When did the Se	CADA start?		
1.1980s	2. 1990s	3. 1970s	(4)1960s
22) Which of the fol	lowing is an ex	ample of the SC	CADA system?
1. Emerson D	elta V	2. Honeywe	II Plant Scape
3. Yokogawa	CENTUM	Power Stu	idio Deluxe
23) How many level	ls are present i	n a complex SC	ADA system?
1. 3 – Levels	2. 5	– Levels	
3. 4 – Levels	A.S.	Levels	
24) Which of the fol	lowing is the h	eart of a SCAD	A system?
1. PLC	2. HMI	Alarm task	
25) Which of the follo	owing is not the	e component of	a SCADA system?
1. Database	server	2. I/O syste	
3.PLC contro	oller	(4)Sparger (controller

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal



Madurai Main Road (NH-45B), Manikandam, Tiruchirappalii - 620 012
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Name of the Student: So Mahanalass

Year/Sem: II / V/

AU Register Number: 811220105023

Value Added Course

		"Autom	ation using P	LC and S	CADA"
	Ī	MULTIPLE (CHOICE QUES	TIONS (25	X1 = 25 Marks
1) W	hich is the first F	PLC model?			
			. 6		
1.	PLC 086	2.PLC 085	(3)PLC 084	4.None	
2) Ho	ow many operation	on steps does	the programma	ble logic co	ntroller have?
1.	Two	2.One	Four	4.Three	
3) In	PLC operation		checks the status	s at the inp	ut side
1.			n (3) Input scan	4.None	
4) Th	e components th	at make PLC	works can be d	livided into	core areas
			-	iiviaca mio	Core areas
1.	Two	2.One	3.Four	4.Three	
5) In 1	PLC operation _	r	etrieves the data	a into an ou	tput module
i (1)	Output scan	2.Inp	out scan	3.Program	m scan 4.None of the above
6) Bef	ore PLC's was c	reated many	industries used		
		_/			
1.	Capacitors (2 Kelays	3.Resistors	4.None of	f the above
7) Wh	at are the types	of programm	able logic contro	ollers?	
1.			2.Fixed and M		
(30)	Fixed, uniform 1	PLC	4. None of the	above	
8) Wh	o invented the Pi	rogrammable	Logic Controlle	er (PLC)?	Dr. G. Balakrishnan, M.E., Ph.D., Principal
0	Dick Morley	2.Jon	as Wenstrom		Indra Ganesan College of Engineering
3.	Thomas Davenp		e of the above		IG Valley, Madurai Main Road Manikandam, Trichy-620 012.
) In r	nodular progran	amable logic	controller		
1	\bigcap				
as (Output is fixed All of above	-	it is fixed		
TP.)	All of above	4.Non	e of above		



Binary format

4.None







10) C	CTV cameras is an exa	nple for automation
(II)	Office automation	2. Scientific automation
3.	Industrial automation	4.Building automation
11) Th	ne PLC's can be progra	mmed in
1. 3.	Instruction list, Function Sequential function of	
12) Th	e programmable logic	controllers are used in
1. 3.	Cement manufacturing Glass and paper indust	~
13) Th	e sequences are classif	ed into
1.	One 2.Two	C(3)Three 4.Four
14) In	modular type PLC, the	PLC's are classified into
1.	Transistor output PLC	2.Relay output PLC
	Triac output PLC	4.All of the above
15) In 1	fixed programmable lo	gic controller
1.	Output is fixed	2.Input is fixed
3.	None of the above \	
16) The	e advantages of PLC a	e
1.	Reliability is high	Dr. G. Balakrishnan, M.E., Ph.D.,
2.	Small in size	Principal
3.	Easy maintenance	Indra Ganesan College of Engineering IG Valley, Madurai Main Road
(4.)	All of the above	Manikandam, Trichy-620 012.
17) The	e visual programming	anguage also called as
O(1.)	-	2.Relay logic
2.	All of the above	4.Controller logic
18) The	PLC internally opera	es, stores, and calculates the value in
1	Decimal format	2.Octal format



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19 What are the components that make the programmable logic controller work?

1. Power supply	2.CPU
3. Input and output module	(4. All of the above
20) The control in SCADA is	
1. Online control	2. Direct control
3. Supervisory control	4. Automatic control
21) When did the SCADA start?	,
1.1980s 2. 1990s	3. 1970s (4.1960s
22) Which of the following is an	example of the SCADA system?
1. Emerson Delta V	2. Honeywell Plant Scape
3. Yokogawa CENTUM	Power Studio Deluxe
23) How many levels are presen	t in a complex SCADA system?
1. 3 – Levels 2.	5 Levels
3. 4 – Levels	6 – Levels
24) Which of the following is the	e heart of a SCADA system?
1. PLC 2. HMI	Alarm task 4. I/O task
25) Which of the following is not	the component of a SCADA system?
 Database server 	2. I/O system
3.PLC controller	(A.)Sparger controller

Dr. G. Balakrishnan, M.E., Ph.D.,







Name of the Student: Hari hevrem. M

Year/Sem: V /VII

AU Register Number: 811218165002

Value Added Course

				a course		
	Ī		tion using PI HOICE QUEST			
1) WI	nich is the first l	PLC model?				
1.	PLC 086	2.PLC 085	3PLC 084	4.None		
2) Ho	w many operati	on steps does t	he programmab	ole logic contr	oller have?	?
1.	Two	2.One	our	4.Three		
3) In 1	PLC operation	ct	ecks the status	at the input s	ide	
1.	Program scan	2.Output scan	Input scan	4.None		
4) Th	e components tl	hat make PLC	works can be di	vided into		_ core areas
1.	Two	2.One	13. Four	4.Three		
5) In F	PLC operation_	re	trieves the data	into an outpu	t module	
10	Output scan	2.Inpu	it șcan	3.Program so	can	4. None of the above
6) Befo	ore PLC's was c	reated many in	ndustries used _			
1.	Capacitors	Relays	3.Resistors	4.None of the	e above	
7) Wha	at are the types	of programma	ble logic control	llers?		
	Modular, unifor Fixed, uniform		2.Fixed and Mo 4.None of the a			0
8) Who	invented the P	rogrammable]	Logic Controlle	r (PLC)?	Dr. G. Ba	alakrishnan, M.E., Ph.D. Principal
1. 3.	Dick Morley Thomas Davenp	2	s Wenstrom		IG Va	esan College of Engineering lley, Madurai Main Road kandam, Trichy-620 012.
9) In n	nodular prograi	mmable logic c	ontroller			
1	0 1 1 6 1	A 7				

Output is fixed All of above

2.Input is fixed

4. None of above



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10) C	CTV cameras is an exa	mple for au	utomation
3.	Office automation Industrial automation	2.Scientific 4.Building a	
11) Th	ne PLC's can be progra	ammed in	
1. 3.	Instruction list, Functi Sequential function of	_	Ladder logic, structured text 4.All of the above
12) Th	ie programmable logic	controllers are used	in
1. 3.	Cement manufacturing Glass and paper indust	·	*
13) Th	e sequences are classif	ied into	v.
1.	One CTwo	3.Three	4.Four
14) In	modular type PLC, the	e PLC's are classified	into
1.	Transistor output PLC Triac output PLC	2.Relay outp 4.All of the a	
15) In	fixed programmable lo	ogic controller	_
1. 3.	Output is fixed None of the above	2.Input is fixed 4AII of above	1 A.
16) Th	e advantages of PLC a	re	100
1. 2. 3.	Reliability is high Small in size Easy maintenance All of the above		Dr. G. Balakrishnan, M.E., Ph.D., Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012.
17) The	e visual programming	language also called a	ns
2.	Ladder logic All of the above	Relay logic Controller logic	
18) The	PLC internally opera	tes, stores, and calcul	ates the value in
1.	Decimal format Binary format	2.Octal format 4.None	







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19	What are the components	that make	the programmable	logic controller work?
----	-------------------------	-----------	------------------	------------------------

1.	Power	supply
----	-------	--------

Input and output module

ll of the above

20) The control in SCADA is

1. Online control

2. Direct control

3. Supervisory control

4. Automatic control

21) When did the SCADA start?

1.1980s

2. 1990s

3.1970s



22) Which of the following is an example of the SCADA system?

1. Emerson Delta V

2. Honeywell Plant Scape

3. Yokogawa CENTUM

4. Power Studio Deluxe

23) How many levels are present in a complex SCADA system?

1. 3 - Levels

2. 5 -Levels

3.4 - Levels

04% - Levels

24) Which of the following is the heart of a SCADA system?

1. PLC

2. HMI

Alarm task

4. I/O task

25) Which of the following is not the component of a SCADA system?

1. Database server

2. I/O system

3.PLC controller

(4) \$parger controller

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Department of Electrical and Electronics Engineering

Academic Year 2021-2022 - Even Semester

VALUE ADDED COURSE ASSESMENT SHEET

"Automation using PLC and SCADA"

S.NO	Register Number	ter Number NAME	YEAR/	Attendance Details		VAC-MCQ TEST		OVERALL MARK (100)	
			BRANCH	No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100)	(50% of A + 50% of	
1	811218105001	ARUN PRAVEEN RAJA	IV/EEE	A. A.	Control of the Contro	The second secon	(B)	B)	
2	811218105002	HARIHARAN M	IV/EEE	30	100	20	80	90	
3	811218105003	INBARAJ A	many and annual and annual and annual and annual and annual and annual a	30	100	19	76	88	
4	811218105004	JEYA STEPHEN S	IV/EEE	27	90	19	76	83	
5	811218105005	- Propose an absolute recognisation because which is recognised to the contract of the contrac	IV/EEE	27	90	21	84	area of a Statement Statem	
6	811218105006	MANIKANDAN N	IV/EEE	27	90	20		87	
7	on Address of the Control of the Con	PADMANABAN A	IV/EEE	27	90		80	85	
	811218105007	SASIKUMAR R	IV/EEE	30	- Marianasta per 1990-19	19	76	83	
8	811218105008	SIVAKUMAR P	IV/EEE	Colored to the section of the	100	20	80	90	
9	811218105009	VEERA RAGAVAN A	IV/EEE	27	90	20	80	85	
10	811218105010	YUVARAJ S	the create, such arrest property with the same	27	90	19	76	83	
	THE STREET STATE OF THE STREET, AND STREET	The second secon	IV/EEE	27	90	19	76	83	

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering

IG Valley Madoral Main Road

Pr. G. Balakrishnan, M.E., Ph.D.,

Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012.



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S.NO Reg	Register Number	NAME	YEAR/	Attendance Details		VAC-MCQ TEST		OVERALL MARK (100)
			BRANCII	No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	(50% of A + 50% of
11	811219105002	M,BARATH	III/EEE	A C	Whose was a state of the state	40000 - 90000 -	1131	В)
12	811219105003	A.MANIKANDAN	III/EEE	30	100	21	84	92
13	811219105005	C.PONNALAGU	III/EEE	27	90	20	80	85
14	811219105006	A.SALAMON	Manager or the same of the sam	30	100	21	84	92
15	811219105007	M.SARAVANAKUMAR	III/EEE	30	100	20	80	90
16	811219105008	Annual of the part	III/EEE	27	90	19	76	83
17	813919105001	K.SOLAIMATHI	III/EEE	24	80	20	80	80
18	811219105301	P.DHEVENTHIRAN	III/EEE	24	80	21	84	. 82
19	811220105001	A. VENKATRAMAN	III/EEE	27	90	22	88	89
20	811220105002	ABINESH T	II/EEE	30	100	20	80	
21	the state of the s	ALEX IMMANVEL S	II/EEE	27	90	21	84	90
22	811220105006	BALAMURUGAN A	II/EEE	24	80	20	80	87
23	811220105011	DIVYA B	II/EEE	27	90	21		80
	811220105013	GAYATHRI M	II/EEE	30	100	Annual - samuel	84	87
24	811220105017	KARTHIK D	II/EEE	30	Maria Aller van Addin Amerika	20	80	90
25	811220105019	LATCHIYA K	II/EEE	**************************************	100	16	64	82
26	811220105022	MANIKANDAN K	II/EEE	30	100	22	88	94



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S.NO	Register Number	NAME	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK (100)
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	(50% of A + 50% of B)
27	811220105023	MOHANDOSS S	II/EEE	27	90	71	0.4	Proces (NestMor) and highwave consisses
28	811220105024	NAVEEN R	II/EEE	27	90	21	84	87
29	811220105031	SANDURU K	II/EEE	27	**************************************	19	76	83
30	811220105032	SANTHIYA A	II/EEE	27	90	19	76	83
31	811220105035	SHANMUGAM S	II/EEE		90	20	80	85
32	811220105037	SNEKA T	II/EEE	30	100	21	84	92
33	811220105038	SOPHIYA K	II/EEE	27	90	19	76	83
34	811220105301	AARTHI S		24	80	21	84	82
35	811220105303	THE PERSON AND THE PE	II/EEE	27	90	20	80	85
36	811220105305	THIRUNAVUKARASU M	II/EEE	30	100	21	84	92
37		VENKATESHWARAN.A	II/EEE	27	90	20	80	85
	811220105306	DIVYA BHARATHI	II/EEE	30	100	19	76	88
38	811220105307	SATHEESH KUMAR	II/EEE	30	100	22	88	94

VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

Gr. Mulith



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			Report	on Valu	ie Added C	ourse			
Title:	"Auto	omatio	n using PLC and	SCADA'	3	or the Andrew State Stat	odka marina nggagagaga sakakkakkakan nggapaya ng Salaganaya		
Resource Person:		Des	Dr.M.Aravith, Design Engineer, Sri Sai Software.						
Date of c	onduct fro		01.08.2022	To:	05.08.2022	Duration:	30 Hours	- Marining depress is	
Organize	d Departn	nent:	Electrical and Electronics Engineering						
Participa	nt Year:	2,3,4	Trape builded the biotecommunication of the property	Minimum open and Administration of	***************************************	Students Regist	tered: 38	PM Mercania	
Venue:	EEE III	vr Cla	ssroom	rrown ye					

Outcome of Value Added Course (VAC): At the end of the Course, Students can able to

- Develop block diagram of PLC and explain the working.
- Classify input and output interfacing devices with PLC.
- Develop architecture of SCADA and explain the importance of SCADA in critical infrastructure.
- Execute, debug and test the programs developed for digital and analog operations.
- Describe various SCADA protocols along with their architecture.
- Observe development of various industrial applications using PLC and SCADA

Assessment Process

- Students, who are securing more than 70% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted
- Total Score = (0.5 *Attendance in VAC out of 100 percentage + 0.5 *Test mark in VAC out of 100 marks)

VAC Coordinator

Gr. Ma Lathi HOD/EEE

Propipal

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

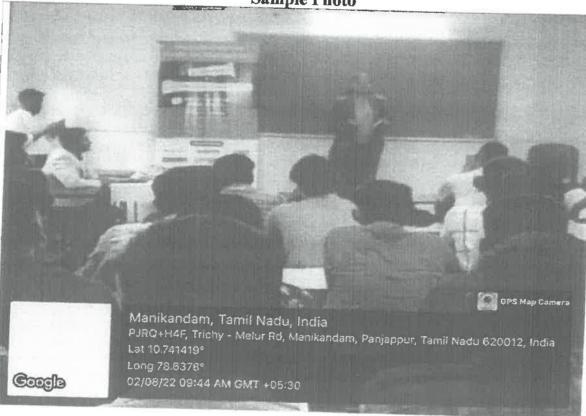


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NAAC Accedited, 2(V) Status feetinties by UGC

Sample Photo of Value Added Course Title: "Automation using PLC and SCADA" Dr.M.Aravith, Resource Person: Design Engineer, Sri Sai Software, Date of conduct from: 01.08.2022 To: 05.08.2022 Duration: 30 Hours Organized Department: **Electrical and Electronics Engineering** Participant Year: 2,3,4 No. of Students Registered: Venue: **EEE Seminar Hall**

Sample Photo



VAC Coordinator

Gr. Ma lattu HOD/EEE



Dr. G. Balakrishnan, M.E., Ph.D.,





This is to certify that Mr. HARIHARAN M, IV Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

Smait Power Care

Mr.C.Sasikumar

Chief Executive Officer.

304.

Principal

IGCE

Dr. G. Balakrishnan, M.





This is to certify that Mr. JEYA STEPHEN S, IV Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

Smait Power Care

Mr.C.Sasikumar

Chief Executive Officer.

Dr. G. Balakrishnan, M.E., Ph.D.

Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012. 324

Principal

IGCE





This is to certify that Mr. MANIKANDAN N, IV Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

Smart Power Care

Mr.C.Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balakeishnan, M.E., Ph.D., Principal







This is to certify that Mr. PADMANABAN A, IV Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

ACH.

Principal IGCE

Dr. G. Balakfishnan, M.E., Ph.D.,

Principal





This is to certify that Mr. SASIKUMAR R, IV Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

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Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.D.,







This is to certify that Mr. YUVARAJ S, IV Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Chief Executive Officer.

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Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.L.





This is to certify that Mr. A.SALAMON, III Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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This is to certify that Ms. C.PONNALAGU, III Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Dr. G. Balakrishnan, M.E., Ph.D.





This is to certify that Ms. K.SOLAIMATHI, III Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

Principal

IGCE

Dr. G. Balakatshnan, M.G., FL.





This is to certify that Mr.A. VENKATRAMAN, III Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

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Principal IGCE

Dr. G. Balakrishnan, M.E., Pn.D.

Principal





This is to certify that Mr. M.BARATH, III Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

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Principal

IGCE

Dr. G. Balakrishian, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.





This is to certify that Mr. P.DHEVENTHIRAN, III Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

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Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.D.,





This is to certify that Ms. LATCHIYA K, II Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

Smart Power Care Mr.C. Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.





This is to certify that Mr. ALEX IMMANVEL S, II Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal







This is to certify that Mr. KARTHIK D, II Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C. Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal





This is to certify that Mr. NAVEEN R, II Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C.Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balkkishiran, M.E., Ph.D.







This is to certify that Mr. VENKATESHWARAN.A, II Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

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Mr.C. Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.,
Principal







This is to certify that Mr. SATHEESH KUMAR S, II Year, EEE has successfully completed the Value Added Course on "Automation using PLC and SCADA" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 1st August 2022 to 5th August 2022 (5days) during the Academic year 2021-2022.

Smart Power Care

Mr.C.Sasikumar

Chief Executive Officer.

Principal IGCE

Dr. G. Balakrishnan, M.E., Ph.D.