

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 2019-2020 / ODD 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:	AUTO	OMAT	ΓΙΟΝ AND R	ово	TICS					AUTOMATION AND ROBOTICS													
Resource Per	Resource Person: Dr.M.ABBAS, DESIGN ENGINEER, SRI SAI SOFTWARE.																						
Date of cond	uct fro	m:	09.12.2019		To:	13.12.2019		Duration:	ration: 30 Hours														
Organized D	epartn	ent:	ELECTRIC	AL A	ND EI	LECTRINIC	E EN	IGINEERIN	īG														
Participant Y	Participant Year: EEI			Sen	nester:	ODD	No. of Students Registered:																
Venue: El	EE- III	Year	Class Room,l	GCE	2																		

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Department of Electrical and Electronics Engineering

Academic Year 2019-2020 -Odd Semester

04.12,2019

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 and Robotics" from 09.12.2019 to 13.12.2019. 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.Abbas, Design Engineer, Sri Sai Software.
Venue	EEE III yr Classroom, IGCE

Gr. Ma Cathi

HOD/EEE

PMINEPAL

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



Value Added Course

"Automation and Robotics"

SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE		
1	Introduction to robots and robotics	3	09.12.2019		
2	Robots kinematics	3	09.12.2019		
3	Robots kinematics	3	10.12.2019		
4	Trajectory planning	3	10.12.2019		
5	Singularity checking	. 3	11.12.2019		
6	Robots dynamics	3	11.12.2019		
7	Control scheme, Sensors	3	12.12.2019		
8	Robot vision	3	12.12.2019		
9	Robot motion planning	3	13.12.2019		
10	Intelligent robot and Automation	3	13.12.2019		
11	Exam	1	13.12.2019		
	Total Hours (Excluding Test)	30	蝾		

VAC Coordinator

Gr. Ma Cathi

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

Principal



GOLLEGE OF ENGINEERING Madural Main Road (NH-45B), Manikandam, Trichy-12. Approved by AICTE, NewDelhi & Affiliated to Anna University, Chennal

Value Added Course

"Automation and Robotics"

STUDENTS PARTICIPATION LIST

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

Principal

Indra Ganesan College of Engineering IG Valley, Madurai Main Road

s.no	REG NO	STUDENTS NAME	IG Valley, Madurai M YEAR/Manikandam, Trichy BRANCH	
1	811216105001	АТТСНАУА А К	IV/EEE	
2	811216105003	BENAZIR M	IV/EEE	
3	811216105004	GUNA SEELAN D	IV/EEE	
4	811216105005	HARI GOWTHAM M	IV/EEE	
5	811216105006	HARIHARAN B	IV/EEE	
6	811216105007	ISWARYA K	IV/EEE	
7	811216105008	KALISTA P	IV/EEE	
8	811216105009	KHAJAMOINUDEEN S	IV/EEE	
9	811216105010	KIRUTHIKA B	IV/EEE	
10	811216105011	LOURDHU MARY D	IV/EEE	
11	811216105012	MARIA SHOBANA J	IV/EEE	
12	811216105014	MERLIN REETA P	IV/EEE	
13	811216105015	NIROSHINI R	IV/EEE	
14	811216105016	NITHING A	IV/EEE	
15	811216105017	PAVENTHAN A	IV/EEE	
16	811216105018	PRAVEEN KUMAR M	IV/EEE	
17	811216105019	PRISILLA PRIYANKA	IV/EEE	
18	811216105020	RAJA V	IV/EEE	
19	811216105021	RATHINA RAJ R	IV/EEE	
20	811216105023	RESHMI D	IV/EEE	



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s.no	REG NO	STUDENTS NAME	YEAR/ BRANCE
21	811216105024	ROOBINI S	IV/EEE
22	811216105025	SURESH K	IV/EEE
23	811216105026	SURIYA PRAKASH K	IV/EEE
24	811216105027	TAMILARASAN M	IV/EEE
25	811216105028	TAMILAZHAGAN M	IV/EEE
26	811216105029	VINOTH R	IV/EEE
27	811216105302	PARKAVI S	IV/EEE
28	811217105005	ARUL JOY ASHA A	III/EEE
29	811217105006	ARUN SEBASTIN P	III/EEE
30	811217105007	BHARTHASARATHI M	III/EEE
31	811217105008	CHITHRA P	III/EEE
32	811217105009	DEEPIKA G	III/EEE
33	811217105010	EZHUMALAI A	III/EEE
34	811217105011	GAYATHRI K	III/EEE
35	811217105012	GAYATHRI S	III/EEE
36	811217105013	KANIMOZHI S	III/EEE
37	811217105014	KEERTHANA S	III/EEE
38	811217105015	KUMARIVALLI T	III/EEE
39	811217105016	MADHUMITHA S	III/EEE
40	811217105017	MANO K	III/EEE
41	811217105018	MEKALA M	III/EEE
42	811217105020	PAVITHRA S	III/EEE
43	811217105021	PRAVEEN RAJ R	NI/EEE
44	811217105022	RAJASEKAR N V	Dr. G. E

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



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s.no	REG NO	STUDENTS NAME	YEAR/ BRANCH
45	811217105023	REVATHI P	III/EEE
46	811217105024	RISHON GURU M	III/EEE
47	811217105026	SANTHOSH K	III/EEE
48	811217105027	SRIKUMAR M S	III/EEE
49	811217105028	SRI LOGESH C	III/EEE
50	811217105029	SUBHA T	III/EEE
51	811217105031	VALARMATHI C C	III/EEE
52	811217105032	VISWANATH R	III/EEE
53	811217105301	SANJEEV KUMAR R	III/EEE
54	811218105001	ARUN PRAVEEN RAJ A	II/EEE
55	811218105002	HARIHARAN M	II/EEE
56	811218105003	INBARAJ A	II/EEE
57	811218105004	JEYA STEPHEN S	II/EEE
58	811218105005	MANIKANDAN N	II/EEE
59	811218105006	PADMANABAN A	II/EEE
60	811218105007	SASIKUMAR R	II/EEE
61	811218105008	SIVAKUMAR P	II/EEE
62	811218105009	VEERA RAGAVAN A	II/EEE
63	811218105010	YUVARAJ S	II/EEE

VAC Coordinator

D:

Gr. Ma lath.

HOD/EEE

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

Principal



Department of Electrical and Electronics Engineering

Academic Year 2019-2020 - Odd Semester

STUDENTS ATTENDANCE LIST

Value Added Course

"Automation and Robotics"

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

							JOUR	,5						ikandam, Tric	ny-620 012
S.NO	REG NO	STUDENTS NAME	YEAR/	09.12	2.2019	10.1	2.2019	11.1	2.2019	12.12	2.2019	13.12	2.2019	NO OF	SIGN OF
		310DER13 IAMINE	BRANCH	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	SESSIONS	THE
1	811216105001	ATTCHAYA K	IV/EEE								/			ATTENDED	STUDENT
2	811216105003	BENAZIR M	IV/EEE			-			~	1	1	~		10	Ans
3	811216105004	GUNA SEELAN D	IV/EEE		4			1	2	1	<u></u>			10	I SUST
4	811216105005	HARI GOWTHAM M	IV/EEE			a					2		✓·	9	Gurs
5	811216105006	HARIHARAN B	IV/EEE			V	1	a			~			9	Hank
6	811216105007	ISWARYA K	IV/EEE	~				~	V	CL	α			8	Han Ho
7	811216105008	KALISTA P		V	a		1	V		1	1	/		9	Burn
8	811216105009	KHAJAMOINUDEEN S	IV/EEE	~		-		~	اسسا		1-		U-	10	Kelisto.
9	811216105010	KIRUTHIKA B	IV/EEE	a								~	/	9	case
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11	811216105012	MARIA SHOBANA J	IV/EEE		V		a	~		<u></u>	<u> </u>			9	Lowers
12	811216105014	MERLIN REETA P						-	~			1		10	Mariash
13	811216105015	NIROSHINI R	IV/EEE		V		a	V		1	1	1		Cy	Mon
14	811216105016	NITHING A	IV/EEE		/		V	V	V	-	1	-	/	10	N,808/
15	811216105017	PAVENTHAN A	IV/EEE		V	V	V	~	00	~	~			10	Nittur
		TATABITIMIN A	IV/EEE	~	V	~			a		,		0/		pavento

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



Indra Ganesan

GOLLEGE OF ENGINEERING

Madural Main Road (NH-45B), Manikandam, Trichy-13

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

>	Madura Approved	il Main	Road	(NH-4	58).M	anikar	dam,Tric University,	hv-12
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S.NO	REG NO	STUDENTS NAME	BRANCH	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	SESSIONS ATTENDED	THE STUDENT
16	811216105018	PRAVEEN KUMAR M	IV/EEE	/		V	- ~		~	V	سا	~	_	10	Den. K.
17	811216105019	PRISILLA PRIYANKA	IV/EEE	V			- ~		1-	سا	-			10	Prisible
18	811216105020	RAJA V	IV/EEE	~	V	a	a		1	1	L	/		8	001010
19	811216105021	RATHINA RAJ R	IV/EEE	-	1	1/	- 1		1		<u></u>			10	Rayou w
20	811216105023	RESHMI D	IV/EEE	-		V	1	a	-	~	V		/	9	Des
21	811216105024	ROOBINI S	IV/EEE	V	1/	~	ــــــا	-	-	سما	L	/	/	10	Roobern
22	811216105025	SURESH K	IV/EEE	V	a	~	~	-		-	سا	~		9	1 Scasio
23	811216105026	SURIYA PRAKASH K	IV/EEE	~	-		سا	~	1	~	1	i	/	10	V Surve
24	811216105027	TAMILARASAN M	IV/EEE	~	-		~	<u></u>	سا	2	1	~	~	10	M Tarre
25	811216105028	TAMILAZHAGAN M	IV/EEE	~	V	~	1	V		2	<u></u>		_	10	H Taun
26	811216105029	VINOTH R	IV/EEE	~		1	V	~	V	-	1		/	10	R. Vingt
27	811216105302	PARKAVI S	IV/EEE	*	L =	i	V	V	an	V	i	V	/	9	S. Paskay
28	811217105005	ARUL JOY ASHA A	III/EEE	1	U"	V	~	V	W	a	a			- 8	p Asher
29	811217105006	ARUN SEBASTIN P	III/EEE			V	1/	·	QL.	V	1_	1	~	9	Polin
30	811217105007	BHARTHASARATHI M	III/EEE	a	0-		-	~	1_	-	1_		·	8	Que Sur
31	811217105008	CHITHRA P	III/EEE	6		~		-	-		-		1	10	Chithel
32 .	811217105009	DEEPIKA G	III/EEE	2		a	~		1	1	1		~	9	G Deepho
33	811217105010	EZHUMALAI A	III/EEE	V			~	1		~	<u></u>		V	10	Fahal
34	811217105011	GAYATHRI K	III/EEE	~	1	V		aL	1				V	CI	Crayat
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36	811217105013	KANIMOZHI S	III/EEE	~	V		V	1/	V	on	1		0	9	KaNim -

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Indra Ganesan

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Indra Ganesan College of Engineeri	11
IG Valley, Madurai Main Road	
Manikandam, Trichy-620 012.	

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3.NO	REG NO	STUDENTS NAME	BRANCH	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	SESSIONS ATTENDED	THE STUDENT
37	811217105014	KEERTHANA S	III/EEE	-	~	~	1/	~	V	1/	1		S	10	Splost
38	811217105015	KUMARIVALLI T	III/EEE	V	1	~	W	1	1	1	1			10	Rumanul
39	811217105016	MADHUMITHA S	III/EEE	V	1		~	94	1	1/	1/			10	A 11
40	811217105017	MANO K	III/EEE	~	1	a	\/.	1		-	L?	./	~	9	Melburk
41	811217105018	MEKALA M	III/EEE	1	1	V	V	a	CL	1		,		8	Manok
42	811217105020	PAVITHRA S	III/EEE	1	V	V	a	1					~	01	1 sekale
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44	811217105022	RAJASEKAR.N V	III/EEE	~						CL	10			9	
45	811217105023	REVATHI P	III/EEE	V	1						مسا		-1/	10	Rayaduh
46	811217105024	RISHON GURU M	III/EEE	V		-	-				سا		1	10	Renath
47	811217105026	SANTHOSH K	III/EEE	a				0 5			1		-/	9	Bours
48	811217105027	SRIKUMAR M S	III/EEE	1		a	a				١٨٨		V		Souther
49	811217105028	SRI LOGESH C	III/EEE				1 7		1/	a	a			S	Suntan
50	811217105029	SUBHA T	III/EEE	-		V		a	1					9	drithma
51	811217105031	VALARMATHI C	III/EEE	1			1/	1				-			sultre:
52	811217105032	VISWANATH R	III/EEE								a			10	Valaxing
53	811217105301	SANJEEV KUMAR R	III/EEE	a	a		1				ا			8	V15urm
54	811218105001	ARUN PRAVEEN RAJ A	II/EEE	1	10	1/3	a	1	اسا	1	V			9	Adverte
55	811218105002	HARIHARAN M	II/EEE	~	~	~	V	1	1	1	- 10	-			
56	811218105003	INBARAJ A	II/EEE	1/	1/	1		a	0	,	-			9	M Havehove
57	811218105004	JEYA STEPHEN S	II/EEE	/							i			10	Indoray



S.NO	REG NO	STUDENTS NAME	YEAR/	09.12	2.2019	10.12	2.2019	11.12	2.2019	12.12	.2019	13.12	.2019	NO OF	SIGN OF
		STODENTS NAIVIE	BRANCH	FN	AN	FN	AN	FN	ΑN	FN	AN	FN	AN	SESSIONS ATTENDED	THE,
58	811218105005	MANIKANDAN N	II/EEE	V	-	_	~		V	~	١	/		10	A . /-
59	811218105006	PADMANABAN A	II/EEE		1	1								10	Manking
60	811218105007	SASIKUMAR R	II/EEE		. /		CN								Jaclan of
61	811218105008	SIVAKUMAR P	II/EEE	-					0				• _	<u>_</u>	Sariku
62	811218105009	VEERA RAGAVAN A	II/EEE	1			V	a						8	Sunt a
63	811218105010	YUVARAJ S	II/EEE				-		- /		u	_		1.0	Keesa Ras

VAC Coordinator

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

Principal

Name of the Student:

Year/Sem:

AU Register Number:

	7	Value Added	Course					
"Automation and Robotics"								
M	MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)							
1. A place where po	wer, informat	ion, or a result	leaves a system					
1. Chassis	2. Output	3. Sensor	4. Troubleshooting					
2. Which of the follow Involving gases?	ing describes	the a use of tecl	nnology or machinery,	specifically				
1. Pneumatics	2. Hy	draulics	3. Actuation	4. Carbonation				
3. The position or alignment relative to points of the compass or other specific Directions.								
1. Loops 4. A mechanism havin Spontaneously			4. Orientation ed that it appears to m	ove				
1. Automatic	2. Clo	ock Jack	3. Robot	4. Automata				
5. The the branch of to Known as?	echnology that	t deals with dim	ensions of microscopic	proportion, is				
		notechnology	3. Microtechnology	4.				
6. Which of the follow	~	-						
 They can ass They can be 	ist humans with used in danger	2. They can replace jobs4. They don't get tired or require a break						
7. The Hummingbird	re	quire extra pov	ver to be able to work.					
1. Sensors	2. LEDs	3. Motors	4. Tri-Color LEDs					
8. The branch of techn Application of robot	-W-4	ds with the desi	gn, construction, opera	tion, and				
1. Levers	2. Robotics	3. Creative po	wer 4. Science CS	F				
		0 ./						

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Principal

9. V	Vhen working	in a grou	p for robotics, stu	ident's should				
 Stay on task but don't work with other group members Socialize with group members outside of your group and then work alone Socialize with other group members and don't help your group Stay on task and work with other group members appropriately 								
10. /					imals but also robots.			
	1. Exoskele			3. Endoskeleton	4. Hardware			
11. T	he 3rd law of 942.	robotics S	Spirit Isaac Asimo	ov first announced the	e 3 laws of robotics in			
 A robot may not injure a human being or, through inaction, allow a human being to come to harm A robot can't go to school A robot must obey orders given it by human beings except where such orders would conflict with the First law A robot must protect its own existence as long as such protection does not conflict with the First or Second I now 								
	with the F	irst or Sec	ond Law	as long as such protec	tion does not conflict			
12. Ho	ow many syste	ms does a	robot have?					
	1.2	2. 6	3.4	4. 3				
13. En	gines and join	ts belong	to what system?					
	1. Digestive s system	ystem	2. Sensory system	3. Electric syste	m 4. Mechanic			
14. Ho	w many types	of robots :	are there?					
	1.7	2. 10	3.6	4. 8				
15. Wh	at are the com	ponents o	f the electric syste	em?				
	Electric join Engines and	ts and cabi		Batteries and electric v Thunder and lightning	viring			
16. How	many compo	nents does	s the control syste					
	1. 4	2. 1	3.2	4. 5				
17. The	processor belo	ngs to the	1800-maga halatapanganin palakan na malabahanyang sakabahan panan sangga					
100	. Sensory syste	em 2.	Mechanic system	3. Electric system	4. Control system			
18. One	of these is NO	Γ a type of	f robot		•			
1	. Medical	2.	Industrial	3. Household	4. Apologetic			

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Principal

	robot base used in the t not all of the tasks in			
 Light senso Robot 	2. Lego M 4. Robot E	find storms Educat Educator Model (R		
20. A block is the bas Blocks perform t	sic unit of programn heir operations in o	ning in the NXT proder along the Sec	orogramming S Juence Beam	oftware.
1. Touch Sens	or 2. Block (p	programming)	3. Ports	4. Behaviors
21. The primary sour	ce of physical motio	on in the Mind sto	rms NXT syste	m.
1. Interactive S	Servo Motor 2.	Behaviors 3. Li	ght Sensor	4. Touch Sensor
22. A machine that is three central caps	abilities: the ability	n and respond to i to Sense, the abili	ts environment ty to Plan, and	t characterized by the ability to
1. Code	2. Taskbot	3. Robots	4. Po	orts
1. Code 23. The three charact				
		nat define a robot	and the state of t	
23. The three charact	eristic capabilities tl 2. Sensor	nat define a robot	nse-Plan-Act	4. NXT Brick
23. The three characters of the characters of th	eristic capabilities tl 2. Sensor	3. Sen , student's should h work alone your group th group members	nse-Plan-Act	4. NXT Brick
23. The three characters 1. Comment 24. When working in an	2. Sensor a group for robotics tead of work and there and don't work with yeard don't socialize wie and work with group	3. Sen 3. Sen 3. Sen 4. student's should 4. work alone 4. your group 6. th group members 6. members appropri 6. up of commands	nse-Plan-Act ately in a program. I	4. NXT Brick



Value Added Course

"Automation and Robotics"

ANSWER KEY

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

VAC Coordinator

Name of the Student: B. Kiruthika

Year/Sem: IV / VII

7.

8.

AU Register Number: 811216105010

Value Added Course

"Automation and Robotics"

2 Automation an	in Kodoffes
MULTIPLE CHOICE QUEST	FIONS (25X1 = 25 Marks)
1. A place where power, information, or a resu	lt leaves a system
1. Chassis 2. Output 3. Sensor	4. Troubleshooting
2. Which of the following describes the a use of tec Involving gases?	hnology or machinery, specifically
Pneumatics 2. Hydraulics	3. Actuation 4. Carbonation
3. The position or alignment relative to points of th Directions.	e compass or other specific
1. Loops 2. Sensor 3) Chassis 4. A mechanism having its motive power so conceal Spontaneously	4. Orientation ed that it appears to move
1. Automatic 2. Clock Jack	3. Robot 4-Automata
5. The the branch of technology that deals with dime Known as?	ensions of microscopic proportion, is
Nannytechnology Micromachinery	3. Microtechnology 4.
6. Which of the following is not an advantage of Rob	ots?
1) They can assist humans with disabilities 3. They can be used in dangerous environment	
7. The Hummingbird require extra power	break er to be able to work.
1. Sensors 2. LEDs 3. Motors	4. Tri-Color LEDs
3. The branch of technology that deals with the design Application of robots	a, construction, operation, and
1. Levers 2. Robotics 3. Creative power	er 4. Science CSF

	Madurai Approved b	Main Road y AICTE, NewDo	(NH-45B),Man olhi & Affiliated to	Ikandam,Trichy-12. Anna University, Chennai
9. When working	in a group for	robotics, studen	nt's should	
2. Socializ	e with group note with other gr	oup members and	roup members f your group and then I don't help your grou members appropriate	p
10. A rigid extern	al covering fo	r the body in son	ne invertebrate anin	nals but also robots.
1. Exoskel	eton 2	2. Armor J.	Andoskeleton	4. Hardware
11. The 3rd law o 1942.	f robotics Spir	it Isaac Asimov	first announced the	3 laws of robotics in
come to 2. A robot 3. A robot conflict 4. A robot	harm can't go to sch must obey ord t with the First	ool ers given it by hun law s own existence a	man beings except w	llow a human being to here such orders would tion does not conflict
12. How many sys	stems does a r	obot have?		
1.2	2.6	-34	4. 3	
13. Engines and j	oints belong to	what system?		
1. Digestiv system	e system 2	2. Sensory system	3. Electric syst	em 4 Mechanic
14. How many ty	pes of robots a	re there?		
1.7	2. 10	3.6	-408	Dr. G. Balakrishnan, M.E., Ph.I. Principal
15. What are the	components of	the electric system	em?	Indra Ganesan College of Engineer
1. Electric 3. Engines	joints and cabl and joints	es (2)	Batteries and electric Thunder and lightnir	IG Valley, Madurai Main Road wiringanikandam, Trichy-620 012.
16. How many co	mponents does	s the control syste	em have?	
1.4	2	3. 2	4. 5	
17. The processor	belongs to the	3		
1. Sensory	system '2	. Mechanic system	m 3. Electric syste	em 4. Control system
18. One of these is	NOT a type o	of robot	and the small conference on the second state of	
1 Medical	2	Industrial	3 Household	4 Apologetic



19. The small mobile robot perform some but not a	base used in the	e Robot Educate the Robotics E	or. This robot is ablingineering activities	e to				
 Light sensor Robot 	2. Lego M A Robot E	ind storms Educ ducator Model (cation Software (REM)					
20. A block is the basic un Blocks perform their o	it of programm perations in or	ning in the NXT der along the S	programming So	ftware.				
1. Touch Sensor	2)Block (p	rogramming)	3. Ports	4. Behaviors				
21. The primary source of	physical motion	n in the Mind s	torms NXT systen	1.				
1. Interactive Servo	ligens.		Light Sensor					
22. A machine that is able to interact with and respond to its environment characterized by three central capabilities: the ability to Sense, the ability to Plan, and the ability to								
1. Code	skbot	3. Robots	4. Port	s				
23. The three characteristic	capabilities tha	nt define a robo	t					
1. Comment	2. Sensor	\mathfrak{S} s	ense-Plan-Act	4. NXT Brick				
24. When working in a grou	p for robotics, s	student's should	d					
 Socialize instead of work and then work alone Stay on task and don't work with your group Work alone and don't socialize with group members Stay on task and work with group members appropriately 								
25. General term for any con	25. General term for any command or group of commands in a program. In the NXTProgramming Software, this is one or more blocks							
1. Comment	2. Jode		4. Robot					

Name of the Student: Crayathri. L

Year/Sem: III / V

AU Register Number: 811217105011

8.

Value Added Course

"Automation a	nd Robotics"	105
MULTIPLE CHOICE QUES	STIONS (25X1 = 25 Mar	ks)
1. A place where power, information, or a res	ult leaves a system	
1. Chassis 2. Output 3. Sensor	4. Troubleshooting	
2. Which of the following describes the a use of te Involving gases?	chnology or machinery,	specifically
1) Pneumatics 2. Hydraulics	3. Actuation	4. Carbonation
3. The position or alignment relative to points of the Directions.	he compass or other spec	cific
1. Loops 2. Sensor 3. Chassis 4. A mechanism having its motive power so concease Spontaneously	4)Orientation led that it appears to mo	ove
1. Automatic 2. Clock Jack	(F.)Robot	4. Automata
5. The the branch of technology that deals with din Known as?	nensions of microscopic l	proportion, is
	3. Microtechnology	
6. Which of the following is not an advantage of Rol	bots?	
They can assist humans with disabilities They can be used in dangerous environment	1 1	lace jobs et tired or require a
7. The Hummingbird require extra pow	er to be able to work.	
1. Sensors 2. LEDs 3 Motors	4. Tri-Color LEDs	
8. The branch of technology that deals with the desig Application of robots	n, construction, operatio	on, and
1. Levers 2. Robotics 3. Creative pow	ver 4. Science CSF	
	10 ./	

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

Appro	ved by AICTE, New	Delhi & Affiliated to	Anna Univers	ity, Chennai
9. When working in a gro	up for robotics, stud	lent's should		
 Socialize with gr Socialize with ot 	her group members a	r group members e of your group and the and don't help your gro up members appropriat	up	
10. A rigid external cover	ing for the body in s	some invertebrate ani	mals but also ro	bots.
1. Exoskeleton	2. Armor	3. Endoskeleton	4. Hardware	
11. The 3rd law of robotic 1942.	s Spirit Isaac Asimo	ov first announced the	e 3 laws of robot	ics in
come to harm 2. A robot can't go 3. A robot must obe conflict with the	to school ey orders given it by First law stect its own existence	g or, through inaction, a human beings except we e as long as such prote	where such orders	s would
12. How many systems do	es a robot have?			
1.2 2.6	5 3	4. 3		
13. Engines and joints bel	ong to what system	?		
1. Digestive system system	2. Sensory syste	em 3 Electric sys	stem 4.	Mechanic
14. How many types of ro	bots are there?			
1.7 2.	3.6		Dr. G. Ba	lakrishnan, M.E., Ph.D Principal
15. What are the compone	ents of the electric sy	ystem?	Indra Gane	san College of Engineering
1. Electric joints an Engines and join		2. Batteries and electr4. Thunder and lightni	ic wiring Manika	ey, Madurai Main Road ndam, Trichy-620 012.
16. How many component	s does the control s	ystem have?		
1.4	3.2	4. 5		
17. The processor belongs	to the	-		
1. Sensory system	2. Mechanic sys	stem 3. Electric sys	tem A Cor	ntrol system
18. One of these is NOT a	type of robot			
i. Medical	2. Industrial	3. Household	(PApo	ologetic



COLLEGE OF ENGINEERING Medural Main Road (NH-45B), Manikandam, Trichy-12. Approved by AICTE, NewDeint & Affiliated to Anna University, Chennel

19. The small mobile rob perform some but no	ot base used in t t all of the tasks	he Robot Educa in the Robotics	tor. This robot is at Engineering activit	ole to ies				
 Light sensor Robot 	2. Lego 1 4. Robot	Mind storms Ed Educator Mode	ucation Software l (REM)					
20. A block is the basic to Blocks perform their	init of program operations in (ming in the N2 order along the	T programming S Sequence Beam_	Software.				
1. Touch Sensor	2. Block	programming)	3 Ports	4. Behaviors				
21. The primary source	of physical moti	on in the Mind	storms NXT syste	em.				
1. Interactive Serv	o Motor	Behaviors 3	. Light Sensor	4. Touch Sensor				
1. Interactive Servo Motor 2. Behaviors 3. Light Sensor 4. Touch Sensor 22. A machine that is able to interact with and respond to its environment characterized by three central capabilities: the ability to Sense, the ability to Plan, and the ability to Act								
1. Code 2.	Taskbot	(3) Robots	4. Pc	orts				
23. The three characteris	tic capabilities t	hat define a ro	bot					
1. Comment	2. Sensor	3	Sense-Plan-Act	4. NXT Brick				
24. When working in a gr	oup for robotic	s, student's sho	uld	<u> </u>				
1. Socialize instead of work and then work alone 2. Stay on task and don't work with your group 3. Work alone and don't socialize with group members 4. Stay on task and work with group members appropriately 25. General term for any command or group of commands in a program. In the NXTProgramming Software, this is one or more blocks								
1. Comment	2.Code	3. Ports	4. Robot					



COLLEGE OF ENGINEERING Madural Main Road (NH-45B). Manikandam, Trichy-12. Approved by AICTE, NewDelhi & Affiliated to Anna University, Chennal

Name of the Student: N. Marrikandem

Year/Sem: III

AU Register Number: 8112-18105005

Value Added Course

"Automation and Robotics"

MULTIPLE CHOICE QUES	ΓΙΟΝS (25X1 = 25 M	larks
 A place where power, information, or a result. Chassis 2 Output 3. Sensor 		g
2. Which of the following describes the a use of tec Involving gases?	chnology or machine	ry, specifically
1. Pneumatics 2. Hydraulics	3 Actuation	4. Carbonation
3. The position or alignment relative to points of the Directions. 1. Loops 2. Sensor 3. Chassis	he compass or other:	specific
Loops 2. Sensor 3. Chassis A mechanism having its motive power so concer Spontaneously) move
1. Automatic 2. Clock Jack	3. Robot	4.) Automata
5. The the branch of technology that deals with die Known as? 1. Nannytechnology (2. Nanotechnology Micromachinery)		
6. Which of the following is not an advantage of Re	obots?	
 They can assist humans with disabilities They can be used in dangerous environment 		n replace jobs on't get tired or require a
7. The Hummingbird require extra po	wer to be able to wor	·k.
1. Sensors 2. LEDs 3. Motors	4. Tri-Color LEDs	
3. The branch of technology that deals with the des Application of robots	ign, construction, op	eration, and
1. Levers 2. Robotics reative po	ower 4. Science	CSF
	1	

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

Approved by AICIE, NewDelmi & Armitated to Anna University, Chemian
9. When working in a group for robotics, student's should
 Stay on task but don't work with other group members Socialize with group members outside of your group and then work alone Socialize with other group members and don't help your group Stay on task and work with other group members appropriately
10. A rigid external covering for the body in some invertebrate animals but also robots.
1. Exoskeleton 2. Armor 3. Endoskeleton 4. Hardware
11. The 3rd law of robotics Spirit Isaac Asimov first announced the 3 laws of robotics in 1942.
 A robot may not injure a human being or, through inaction, allow a human being to come to harm A robot can't go to school A robot must obey orders given it by human beings except where such orders would conflict with the First law A robot must protect its own existence as long as such protection does not conflict with the First or Second Law
12. How many systems does a robot have? 1. 2 3. 4 4. 3
13. Engines and joints belong to what system?
1. Digestive system 2. Sensory system (3) Electric system 4. Mechanic system
14. How many types of robots are there?
Dr. G. Balakrishnan, M.E., Ph.D. 2. 10 3. 6 Principal
15. What are the components of the electric system? Indra Ganesan College of Line and Indra Ganesan College
1. Electric joints and cables 3. Engines and joints Manikandam, Trichy-620 012. 2. Baterries and electric wiring 4. Thunder and lightning
16. How many components does the control system have?
1.4 (2.)1 3.2 4.5
17. The processor belongs to the
1. Sensory system 2. Mechanic system 3. Electric system (A) Control system
18. One of these is NOT a type of robot
1. Medical 2. Industrial 3. Household 4. Apologetic



COLLEGE OF ENGINEERING Madural Main Road (NH-45B), Manikandam, Trichy-12.
Approved by AICTE, NewDelhi & Affiliated to Anna University, Chemnal

19. The small mobile perform some bu	robot base used in it not all of the tasks	the Robot Educates in the Robotics I	or. This robot is a Engineering activi	ble to ties
 Light sense Robot 	or 2. Lego Robot	Mind storms Edu t Educator Model	cation Software (REM)	
20. A block is the ba Blocks perform t	sic unit of progran heir operations in	aming in the NX' order along the S	F programming : Sequence Beam_	Software.
1. Touch Sens			3. Ports	4. Behaviors
21. The primary soul	rce of physical mot	tion in the Mind	storms NXT syst	em.
	Servo Motor 2			4. Touch Sensor
22. A machine that is three central cap.	able to interact wi abilities: the ability	ith and respond (y to Sense, the ab	o its environmen ility to Plan, and	t characterized by the ability to
1. Code	2. Taskbar	(3) Robots	4. P	orts
23. The three charact	eristic capabilities	that define a rob	ot	
1. Comment	2. Sensor			4. NXT Brick
24. When working in	a group for robotic	s, student's shou	ıld	
(2.)Stay on task 3. Work alone a	tead of work and the and don't work with and don't socialize w and work with group ny command or gr g Software, this is	your group with group membe p members approp	oriately	in the
1. Comment	2. Code	7	4. Robot	



STUDENTS PARTICIPATION LIST

Department of Electrical and Electronics Engineering

Academic Year 2019-2020 - Odd Semester

VALUE ADDED COURSE ASSESMENT SHEET

"Automation and Robotics"

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

S.NO REG NO	STUDENTS NAME	YEAR/ BRANC H	Attendance Details		VAC-MCQ TEST		OVERALL	
			No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	MARK(100) (50% of A + 50% of B)	
1	811216105001	ATTCHAYA K	IV/EEE	30	100	20	80	90
2	811216105003	BENAZIR M	IV/EEE	30	100	19	76	88
3	811216105004	GUNA SEELAN D	IV/EEE	27	90	19	76	83
4	811216105005	HARI GOWTHAM M	IV/EEE	27	90	21	84	87
5	811216105006	HARIHARAN B	IV/EEE	24	80	20	80	80
6	811216105007	ISWARYA K	IV/EEE	27	90	19	76	83
7	811216105008	KALISTA P	IV/EEE	30	100	20	80	90
8	811216105009	KHAJAMOINUDEEN S	IV/EEE	27	90	19	76	83
9	811216105010	KIRUTHIKA B	IV/EEE	27	90	19	76	83
10	811216105011	LOURDHU MARY D	IV/EEE	27	90	19	76	83
11	811216105012	MARIA SHOBANA J	IV/EEE	30	100	21	84	92
12	811216105014	MERLIN REETA P	IV/EEE	27	90	20	80	85
13	811216105015	NIROSHINI R	IV/EEE	30	100	21	84	92
14	811216105016	NITHING A	IV/EEE	30	100	19	76	88



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Madural Main Road (NH-45B), Manikandam, Trichy-12.
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Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

S.NO	REG NO	STUDENTS NAME	YEAR/ BRANC H	Attendance Details		VAC-MCQ TEST		OVERALL
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	MARK(100) (50% of A + 50% of B)
15	811216105017	PAVENTHAN A	IV/EEE	27	90	19	76	83
16	811216105018	PRAVEEN KUMAR M	IV/EEE	30	100	20	80	90
17	811216105019	PRISILLA PRIYANKA	IV/EEE	30	100	21	84	92
18	811216105020	RAJA V	IV/EEE	24	80	22	88	84
19	811216105021	RATHINA RAJ R	IV/EEE	30	100	20	80	90
20	811216105023	RESHMI D	IV/EEE	27	90	21	84	87
21	811216105024	ROOBINI S	IV/EEE	30	100	20	80	90
22	811216105025	SURESH K	IV/EEE	27	90	21	84	87
23	811216105026	SURIYA PRAKASH K	IV/EEE	30	100	20	80	90
24	811216105027	TAMILARASAN M	IV/EEE	30	100	19	76	88
25	811216105028	TAMILAZHAGAN M	IV/EEE	30	100	20	80	90
26	811216105029	VINOTH R	IV/EEE	30	100	21	84	92
27	811216105302	PARKAVI S	IV/EEE	27	90	20	80	85
28	811217105005	ARUL JOY ASHA A	III/EEE	24	80	19	76	<u>83</u>
29	811217105006	ARUN SEBASTIN P	III/EEE	27	90	19	76	
30	811217105007	BHARTHASARATHI M	III/EEE	24	80	19	76	83
31	811217105008	CHITHRA P	III/EEE	30	100	20	80	78
32	811217105009	DEEPIKA G	III/EEE	27	90	19	76	90
33	811217105010	EZHUMALAI A	III/EEE	30	100	21		83
34	811217105011	GAYATHRI K	III/EEE	27	90	20	84 80	92 85



Madural Main Road (NH-458), Manikandam, Trichy-12.
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Dr. G. Balakrishnan, M. 红, Ph.D.
Principal
Indra Ganesan College of Engineering

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

S.NO REG NO			YEAR/	Attendance Details		VAC-MCQ TEST		OVERALL
	STUDENTS NAME	BRANC H	No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	MARK(100) (50% of A + 50% of B)	
35	811217105012	GAYATHRI S	III/EEE	30	100	21	84	92
36	811217105013	KANIMOZHI S	III/EEE	27	90	20	80	85
37	811217105014	KEERTHANA S	III/EEE	30	100	19	76	88
38	811217105015	KUMARIVALLI T	III/EEE	30	100	21	84	92
39	811217105016	MADHUMITHA S	III/EEE	30	100	21	84	92
40	811217105017	MANO K	III/EEE	27	90	21	84	87
41	811217105018	MEKALA M	III/EEE	24	80	20	80	80
42	811217105020	PAVITHRA S	III/EEE	27	90	21	84	87
43	811217105021	PRAVEEN RAJ R	III/EEE	30	100	20	80	90
44	811217105022	RAJASEKAR.N V	III/EEE	27	90	19	76	83
45	811217105023	REVATHI P	III/EEE	30	100	22	88	the same of the same
46	811217105024	RISHON GURU M	III/EEE	30	100	21	84	94
47	811217105026	SANTHOSH K	III/EEE	27	90	22	- 10000 1-100-0	92
48	811217105027	SRIKUMAR M S	III/EEE	24	80	20	88	89
49	811217105028	SRI LOGESH C	III/EEE	24	80	20	80	80
50	811217105029	SUBHA T	III/EEE	27	90	23	80	80
51	811217105031	VALARMATHI C	III/EEE	30	100		92	91
52	811217105032	VISWANATH R	III/EEE	27	90	22	88	94
53	811217105301	SANJEEV KUMAR R	III/EEE	24	80	19	76	83
54	811218105001	ARUN PRAVEEN RAJ A	II/EEE	27	90	21 20	84	82 85



S.NO REG NO	STUDENTS NAME	YEAR/ BRANC H	Attendance Details		VAC-MCQ TEST		OVERALL	
			No. of Hours Attended	Attendance Mark(100)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A +	
55	811218105002	HARIHARAN M	II/EEE	30	(A)	Answers	(B)	50% of B)
56	811218105003	INBARAJ A			100	21	84	-92
57	811218105004	The state of the s	II/EEE	27	90	19	76	83
A STREET, SHIPPER SHIPPER		JEYA STEPHEN S	II/EEE	30	100	19	76	88
58	811218105005	MANIKANDAN N	II/EEE	30	100	20	#	***************************************
59	811218105006	PADMANABAN A	II/EEE	30	Water Company		80	90
60	811218105007	SASIKUMAR R	AND THE PERSON NAMED IN		100	21	84	92
61	811218105008	The second secon	II/EEE	27	90	21	84	87
-	AND DESCRIPTION OF THE PARTY OF	SIVAKUMAR P	II/EEE	24	80	20	80	showing the same the
62	811218105009	VEERA RAGAVAN A	II/EEE	27	90	P 10 W 11 - Printer		80
63	811218105010	YUVARAJS	-		on he between morning party	21	84	87
P-Military A	Charles and the second	The state of the s	II/EEE	30	100	20	80	90

VAC Coordinator

Gr. Ma Cathi

HoD/EEE

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

Principal



Madurai Main Road (NH-45B), Manikandam, Trichy-12. Approved by AICTE, NewDelhi & Affiliated to Anna University, Chennai

Report on Value Added Course

Title:

"Automation and Robotics"

Resource

Dr.M.Abbas.

Person:

Design Engineer,

Sri Sai Software

Date of conduct from:

09.12.2019

To: | 13.12.2019

Duration:

30 Hours

Organized

Electrical and Electronics Engineering

Department:

Participant Year:

2,3,4

No. of Students Registered:

63

Venue:

EEE III yr Classroom

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

- Understand basic components of robotics, classification of robots and their applications.
- Know on types of robot grippers, their usage and design considerations.
- Understand about various types of sensory devices their working and applications.
- Apply basic transformations related to the movement of manipulator.
- Design a robot mechanism to meet kinematics requirements and to write simple programs.

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

Fr. Ma Cath

HOD/EFE

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

Principal



Madural Main Road (NH-458). Manikandam, Trichy-12.
Approved by AICTE, NewDelhi & Affiliated to Anna University, Chennal

Sample Photos of Value Added Course

Title:

"Automation and Robotics"

Resource

Dr.M.Abbas.

Person:

Design Engineer,

Sri Sai Software

Date of conduct from:

09.12.2019

To:

13.12.2019

Duration:

30 Hours

Organized

Department:

Electrical and Electronics Engineering

Participant Year:

2,3,4

No. of Students

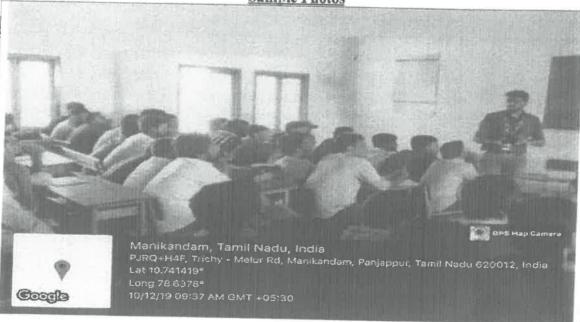
Registered:

63

Venue:

EEE III yr Classroom

Sample Photos



GI. Ma latti

pal

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

Principal







This is to certify that Ms. BENAZIR M, IV Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

Sri Sai Software

Mr.S.Ritik Singh

Chief Executive Officer.

Principal IGCE







This is to certify that Ms. ISWARYA K, IV Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

Sri Sai Software

Mr.S.Ritik Singh

Chief Executive Officer.

304

Principal IGCE

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







This is to certify that Ms. MERLIN REETA P, IV Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

Add to the

Sri Sai Software

Mr.S.Ritik Singh

Chief Executive Officer.

(D:

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

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

Principal IGCE







This is to certify that Ms. PRISILLA PRIYANKA, IV Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

(dille) and

Sri Sai Software

Mr.S.Ritik Singh

Chief Executive Officer.

(D):

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
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IG Valley, Madurai Main Road Manikandam, Trichy-620 012. 234

Principal IGCE







This is to certify that Mr. SURESH K, IV Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

(Jana)

Sri Sai Software

Mr.S.Ritik Singh

Chief Executive Officer.

(D:

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Principal

IGCE







This is to certify that Mr. VINOTH R, IV Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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Chief Executive Officer.

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This is to certify that Mr. ARUN SEBASTIN P, III Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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Chief Executive Officer.

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CERTIFICATE OF PARTICIPATION

This is to certify that Mr. BHARTHASARATHI M, III Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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Principal IGCE







This is to certify that Ms. DEEPIKA G, III Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Ms. MEKALA M, III Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. RISHON GURU M, III Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. SANTHOSH K, III Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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CERTIFICATE OF PARTICIPATION

This is to certify that Mr. VEERA RAGAVAN A, II Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. HARIHARAN M, II Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. VISWANATH R, II Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. PADMANABAN A, II Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. YUVARAJ S, II Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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This is to certify that Mr. INBARAJ A, II Year, EEE has successfully completed the Value Added Course on "Automation and Robotics" organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 9th December 2019 to 13th December 2019 (5days) during the Academic year 2019-2020.

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