



# Indra Ganesan

## COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai  
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

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

# NAAC DOCUMENTS

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## QUALITY INDICATOR FRAME WORK

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### CRITERION – 1

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## CURRICULAR ASPECTS

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SUBMITTED BY

**IQAC**

INTERNAL QUALITY ASSURANCE CELL

**INDRA GANESAN COLLEGE OF ENGINEERING**





**DEPARTMENT OF ELECTRICAL AND ELECTRIC ENGINEERING**

**ACADEMIC YEAR 2020-2021 / 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**

<b>VAC Title:</b>	<b>IoT-Raspberry Pi</b>				
<b>Resource Person:</b>	<b>M.SURESH, DESIGN ENGINEER, SRI SAI SOFTWARE .</b>				
<b>Date of conduct from:</b>	<b>08.02.2021</b>	<b>To:</b>	<b>12.02.2021</b>	<b>Duration:</b>	<b>30 Hours</b>
<b>Organized Department:</b>	<b>ELECTRICAL AND ELECTRIC ENGINEERING</b>				
<b>Participant Year:</b>	<b>EEE- IV, III, II</b>	<b>Semester:</b>	<b>ODD</b>	<b>No. of Students Registered:</b>	<b>44</b>
<b>Venue:</b>	<b>GOOGLE MEET</b>				

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**COLLEGE OF ENGINEERING**  
Madurai Main Road (NH-45B), Manikandam, Trichy-12.  
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Department of Electrical and Electronics Engineering

Academic Year 2020-2021 –Odd Semester

04.02.2021

## 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 "IoT-Raspberry Pi" from 08.02.2021 to 12.02.2021. Certificates will be issued to the eligible participants at the end of the Course. This training will be conducted through online mode.

Resource Person Detail	1. M.Suresh, Design Engineer, Sri Sai Software.
Online Mode	Google Meet

G. Malathi  
HOD/EEE

  
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

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





**Value Added Course**

**"IoT-Raspberry Pi"**

**SYLLABUS**

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	Introduction to IoT	3	08.02.2021
2	Basics of Networking, Communication Protocols	3	08.02.2021
3	Sensor Networks	3	09.02.2021
4	Machine-to-Machine Communications	3	09.02.2021
5	Interoperability in IoT, Introduction to Arduino Programming	3	10.02.2021
6	Integration of Sensors and Actuators with Arduino Introduction to Python programming,	3	10.02.2021
7	Introduction to Raspberry Pi, Implementation of IoT with Raspberry Pi	3	11.02.2021
8	SDN for IoT (contd), Data Handling and Analytics, Cloud Computing	3	11.02.2021
9	Fog Computing, Smart Cities and Smart Homes	3	12.02.2021
10	Connected Vehicles, Smart Grid, Industrial IoT, Industrial IoT (contd), Case Study: Agriculture, Healthcare, Activity Monitor	3	12.02.2021
11	Exam	1	12.02.2021
<b>Total Hours (Excluding Test)</b>		<b>30</b>	-

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VAC Coordinator

*G. Maniathan*  
HOD/EEE



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## Value Added Course

### STUDENTS PARTICIPATION LIST

#### "IoT-Raspberry Pi"

S.NO	Register Number	Student Name	YEAR/ BRANCH
1	811217105005	ARUL JOY ASHA A	IV/EEE
2	811217105006	ARUN SEBASTIN P	IV/EEE
3	811217105007	BHARTHASARATHI M	IV/EEE
4	811217105008	CHITHRA P	IV/EEE
5	811217105009	DEEPIKA G	IV/EEE
6	811217105010	EZHUMALAI A	IV/EEE
7	811217105011	GAYATHRI K	IV/EEE
8	811217105012	GAYATHRI S	IV/EEE
9	811217105013	KANIMOZHI S	IV/EEE
10	811217105014	KEERTHANA S	IV/EEE
11	811217105015	KUMARIVALLI T	IV/EEE
12	811217105016	MADHUMITHA S	IV/EEE
13	811217105017	MANO K	IV/EEE
14	811217105018	MEKALA M	IV/EEE
15	811217105020	PAVITHRA S	IV/EEE
16	811217105021	PRAVEEN RAJ R	IV/EEE
17	811217105022	RAJASEKAR.N V	IV/EEE
18	811217105023	REVATHI P	IV/EEE
19	811217105024	RISHON GURU M	IV/EEE
20	811217105026	SANTHOSH K	IV/EEE
21	811217105027	SRIKUMAR M S	IV/EEE
22	811217105028	SRI LOGESH C	IV/EEE
23	811217105029	SUBHA T	IV/EEE
24	811217105031	VALARMATHI C	IV/EEE
25	811217105032	VISWANATH R	IV/EEE
26	811217105301	SANJEEV KUMAR R	IV/EEE
27	811218105001	ARUN PRAVEEN RAJ A	III/EEE
28	811218105002	HARIHARAN M	III/EEE
29	811218105003	INBARAJ A	III/EEE
30	811218105004	JEYA STEPHEN S	III/EEE

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Trichy-12, Tamil Nadu-620 012




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S.NO	Register Number	Student Name	Year/ Branch
31	811218105005	MANIKANDAN N	III/EEE
32	811218105006	PADMANABAN A	III/EEE
33	811218105007	SASIKUMAR R	III/EEE
34	811218105008	SIVAKUMAR P	III/EEE
35	811218105009	VEERA RAGAVAN A	III/EEE
36	811218105010	YUVARAJ S	III/EEE
37	811219105001	ARULRAJ .A	II/EEE
38	811219105002	BARATH M.M	II/EEE
39	811219105003	MANIKANDAN A	II/EEE
40	811219105004	MANIKANDAN K	II/EEE
41	811219105005	PONNALAGU C	II/EEE
42	811219105006	SALAMON A	II/EEE
43	811219105007	SARAVANAKUMAR M	II/EEE
44	811219105008	SOLAIMATHI .K	II/EEE
45	811219105701	DHEVENTHIRAN .P	II/EEE
46	813919105301	VENKATRAMAN.A	II/EEE

  
VAC Coordinator

  
HOD/EEE

  
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S.NO	Register Number	Name	YEAR/ BRANCH	08.02.2021		09.02.2021		10.02.2021		11.02.2021		12.02.2021		NO OF SESSIONS ATTENDED	SIGNATURE OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
36	811218105010	YUVARAJ S	III/EEE	P	P	P	P	P	P	P	A	P	P	9	ONLINE
37	811219105001	ARULRAJ .A	II/EEE	P	P	P	P	P	P	P	P	P	P	10	
38	811219105002	BARATH M.M	II/EEE	P	P	P	P	P	P	P	P	P	P	10	
39	811219105003	MANIKANDAN A	II/EEE	P	P	P	P	P	P	P	P	P	P	10	
40	811219105004	MANIKANDAN K	II/EEE	P	P	P	P	P	A	P	P	P	P	9	
41	811219105005	PONNALAGU C	II/EEE	P	P	A	P	P	P	P	A	P	P	8	
42	811219105006	SALAMON A	II/EEE	P	P	P	P	P	A	P	P	P	P	9	
43	811219105007	SARAVANAKUMAR M	II/EEE	P	P	P	P	P	P	P	P	P	P	10	
44	811219105008	SOLAIMATHI .K	II/EEE	P	P	P	P	P	P	P	A	P	P	9	
45	811219105701	DHEVENTHIRAN .P	II/EEE	P	P	P	P	P	A	P	P	P	P	9	
46	813919105301	VENKATRAMAN.A	II/EEE	P	P	A	P	P	P	P	A	P	P	8	

  
VAC Coordinator

  
HoD/EEE

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



Name of the Student:

Year/Sem:

AU Register Number:

Value Added Course  
**“IoT-Raspberry Pi”**

**MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)**

1. The Raspberry Pi is defined as the \_\_\_\_\_  
a) Micro Computer    b) Mega Computer    c) Minicomputer    d) Nano Computer
2. Raspbian is \_\_\_\_\_  
a) Assembler    b) Language    c) Compiler    d) OS
3. Raspberry Pi consists of a \_\_\_\_\_ quad-core processor or microprocessor.  
a) 16-bit    b) 32-bit    c) 64-bit    d) 128-bit
4. The Raspberry Pi has a \_\_\_\_\_ interface to allow it to perform serial data communications.  
a) UART    b) GPIO    c) I2C    d) SPI
5. How many USB ports are present in Raspberry Pi 3?  
a) 5    b) 2    c) 4    d) 3
6. What bit processor is used in Pi 3?  
a) 64-bit    b) 32-bit    c) 128-bit    d) Both 64 and 32 bit
7. What is the speed of operation in Pi 3?  
a) 900MHz    b) 1.2GHz    c) 1GHz    d) 500MHz
8. What is the Ethernet/LAN cable used in RPi?  
a) Cat5    b) Cat5e    c) Cat6    d) RJ45
9. How many Input/output pins on board Raspberry Pi3 has?  
a) 20    b) 30    c) 40    d) 50
10. How much RAM, the Raspberry Pi has?  
a) 2GiB of RAM    b) 1GiB of RAM    c) 4GiB of RAM    d) 8GiB of RAM

  
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11. What is the maximum peripheral current draw allowed in Raspberry Pi 3?

- a) 1200 Ma                      b) 700 mA                      c) 500 mA                      d) 100 mA

12. What does GPIO stand for?

- a) General Purpose Inner Outer Propeller                      b) General Purpose Input Output Pins  
c) Generally Powered Input Output Pins                      d) General Purpose Input Output Processor

13. What do we use to connect TV to RPi?

- a) Male HDMI                      b) Female HDMI  
c) Male HDMI and Adapter                      d) Female HDMI and Adapter

14. Data collected by Raspberry Pi from the sensor can be

- a) Processed in Raspberry Pi                      b) Sent to other devices connected to the network  
c) Used to control/activate other devices in the network                      d) All of the above

15. Which operating system Raspberry Pi has?

- a) Linux                      b) Open BSD                      c) Net BSD                      d) All of the above

16. How power supply is done to RPi?

- a) USB connection                      b) Internal battery                      c) Charger                      d) Adapter

17. What are the mode(s) used for addressing the pins in Raspberry Pi?

- a) GPI                      b) BCM                      c) BOARD & BCM                      d) GPIO, BCIM & CAN

18. What are the parameters that are default values?

- a) Port Name and Bits                      b) Speed and Port Names  
c) Speed and Parity                      d) Stop bit and Flow Control

19. The BCM 14 pin of Raspberry Pi is

- a) Physical pin 8                      b) UART  
c) Transmitter pin                      d) All of the above

20. What is the command used for easy using of GNU screen?

- a) \$user add -G {dial out} your name                      b) Screen Port\_Name115200  
c) Minicom -b 115200 -o -D Port Name                      d) Prompt> # help

  
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21. The Raspberry Pi is defined as the?

- a) Minicomputer      b) Micro Computer  
c) Mega Computer      d) Nano Computer

22. Which instruction set architecture is used in Raspberry Pi?

- a) X86      b) MSP      c) AVR      d) ARM

23. Which instruction set is used in Raspberry Pi?

- a) CISC      b) RISC      c) MIPS      d) None of these mentioned

24. Which of the following variants of Raspberry Pi has an inbuilt wi-fi?

- a) Raspberry Pi 2      b) Raspberry Pi 3  
c) Raspberry Pi A+      d) Raspberry Pi Zero

25. Which of the following is a not type of Raspberry Pi?

- a) Raspberry Pi Alternatives      b) Raspberry Pi Zero W  
c) Raspberry Pi 3 Model B+      d) Raspberry Pi 3 Model A+

  
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Value Added Course

**“IoT-Raspberry Pi”**

**ANSWER KEY**

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

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VAC Coordinator

# IOT - Raspberry Pi

12/2/21

ARULRAJ.A

811219105001

II Yr / III sem

1. c) Mini computer

2. d) OS

3. c) 64-bit

4. b) GPEA

5. c) 4

6. a) 64-bit

7. b) 1.2 GHz

8. d) RJ45

9. d) 50

10. b) 16 GB of RAM

11. a) 1200 mA

12. b) general purpose input output pin

13. c) Male HDMI and Adapter

14. b) sent to other devices computer to the network

15. d) All of above

16. a) USB connection

17. c) Board & RAM

18. b) speed and Part Name

19. c) Transmitter Role

20. b) screen port - Nano 15200-

21. b) Mini computer

22. d) RAM

23. c) MIPSE

24. c) Raspberry Pi 4

25. d) Raspberry Pi Model B+

20  
25

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IOT- Raspberry

12.2.21


VEENA RAGAVAN.A

811218105009

III<sup>rd</sup> year EEE / 5<sup>th</sup> sem

- 1) c) Minicomputer
- 2) d) OS
- 3) b) 32-bit
- 4) a) UART
- 5) c) 4V
- 6) a) 64 bit
- 7) c) LAN
- 8) d) RJ45
- 9) c) 40
- 10) b) 1 GiB of RAM
- 11) a) 1200mA
- 12) a) General purpose inner outer propeller
- 13) c) Male HDMI and Adaptor
- 14) d) All of the Above
- 15) d) All of the Above
- 16) b) Internal battery
- 17) c) Board & BCM
- 18) b) Speed and port names
- 19) d) All of the Above
- 20) b) screen port - name 15200
- 21) a) Minicomputer
- 22) d) ARM
- 23) c) MIPS
- 24) b) Raspberry Pi 3
- 25) d) Raspberry pi 3 model A+

21  
-----  
25

  
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12.2.21

# ToT - Raspberry Pi


Name: Koonthana S

Reg No: 811217105014

Year/Sem: IV / 2 / 07

1. c. Mini computers ✓
2. d. OS ✓
3. c. 64-bit ✓
4. b. GPT ✓
5. c. 4 ✓
6. a. 64-bit ✓
7. b. 12GHz ✓
8. d. RJ45 ✓
9. d. 50 ✓
10. b. 1 GiB of RAM ✓
11. a. 1200 Ma ✓
12. b. General purpose Input output pins ✓
13. c. Male HDMI and Adaptor ✓
14. b. Sent to other devices connected to the network ✓
15. d. All of the above ✓
16. a. USB connection ✓
17. c. BOD and BCC ✓
18. b. Speed and port Name ✓
19. c. Transmitter pin ✓
20. b. Screen port Name 115200 ✓

19  
25

  
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## Department of Electrical and Electronics Engineering

Academic Year 2020-2021 – Odd Semester

### VALUE ADDED COURSE ASSESMENT SHEET

“IoT-Raspberry Pi”

S.NO	Register Number	Name	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK (100) (50% of A + 50% of B)
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
1	811217105005	ARUL JOY ASHA A	IV/EEE	30	100	20	80	90
2	811217105006	ARUN SEBASTIN P	IV/EEE	30	100	19	76	88
3	811217105007	BHARTHASARATHI M	IV/EEE	27	90	20	80	85
4	811217105008	CHITHRA P	IV/EEE	27	90	21	84	87
5	811217105009	DEEPIKA G	IV/EEE	27	90	20	80	85
6	811217105010	EZHUMALAI A	IV/EEE	27	90	19	76	83
7	811217105011	GAYATHRI K	IV/EEE	30	100	20	80	90
8	811217105012	GAYATHRI S	IV/EEE	27	90	20	80	85
9	811217105013	KANIMOZHI S	IV/EEE	27	90	19	76	83
10	811217105014	KEERTHANA S	IV/EEE	27	90	19	76	83
11	811217105015	KUMARIVALLI T	IV/EEE	30	100	21	84	92
12	811217105016	MADHUMITHA S	IV/EEE	27	90	20	80	85
13	811217105017	MANO K	IV/EEE	30	100	21	84	92





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S.NO	Register Number	Name	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK (100) (50% of A + 50% of B)
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
14	811217105018	MEKALA M	IV/EEE	30	100	20	80	90
15	811217105020	PAVITHRA S	IV/EEE	27	90	19	76	83
16	811217105021	PRAVEEN RAJ R	IV/EEE	24	80	20	80	80
17	811217105022	RAJASEKAR.N V	IV/EEE	24	80	21	84	82
18	811217105023	REVATHI P	IV/EEE	27	90	22	88	89
19	811217105024	RISHON GURU M	IV/EEE	30	100	20	80	90
20	811217105026	SANTHOSH K	IV/EEE	27	90	21	84	87
21	811217105027	SRIKUMAR M S	IV/EEE	24	80	20	80	80
22	811217105028	SRI LOGESH C	IV/EEE	27	90	21	84	87
23	811217105029	SUBHA T	IV/EEE	30	100	20	80	90
24	811217105031	VALARMATHI C	IV/EEE	30	100	20	80	90
25	811217105032	VISWANATH R	IV/EEE	30	100	21	84	92
26	811217105301	SANJEEV KUMAR R	IV/EEE	30	100	21	84	92
27	811218105001	ARUN PRAVEEN RAJ A	III/EEE	27	90	20	80	85
28	811218105002	HARIHARAN M	III/EEE	27	90	19	76	83
29	811218105003	INBARAJ A	III/EEE	27	90	19	76	83
30	811218105004	JEYA STEPHEN S	III/EEE	27	90	20	80	85
31	811218105005	MANIKANDAN N	III/EEE	30	100	21	84	92
32	811218105006	PADMANABAN A	III/EEE	27	90	19	76	83



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S.NO	Register Number	Name	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK (100) (50% of A + 50% of B)
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
33	811218105007	SASIKUMAR R	III/EEE	24	80	21	84	82
34	811218105008	SIVAKUMAR P	III/EEE	27	90	20	80	85
35	811218105009	VEERA RAGAVAN A	III/EEE	30	100	21	84	92
36	811218105010	YUVARAJ S	III/EEE	27	90	19	76	83
37	811219105001	ARULRAJ A	II/EEE	30	100	19	76	88
38	811219105002	BARATH M.M	II/EEE	30	100	20	80	90
39	811219105003	MANIKANDAN A	II/EEE	30	100	21	84	92
40	811219105004	MANIKANDAN K	II/EEE	27	90	21	84	87
41	811219105005	PONNALAGU C	II/EEE	24	80	20	80	80
42	811219105006	SALAMON A	II/EEE	27	90	21	84	87
43	811219105007	SARAVANAKUMAR M	II/EEE	30	100	20	80	90
44	811219105008	SOLAIMATHI K	II/EEE	27	90	19	76	83
45	811219105701	DHEVENTHIRAN .P	II/EEE	27	90	21	84	87
46	813919105301	VENKATRAMAN.A	II/EEE	24	80	20	80	80

*Jr*  
VAC Coordinator

*Gr. Ma Lath*  
HOD/EEE



### Report on Value Added Course

Title: "IoT-Raspberry Pi "			
Resource Person: M.Suresh, Design Engineer, Sri Sai Software.	A. Siva Subramanian, Trainer, Sri Sai Software		
Date of conduct from : 08.02.2021	To: 12.02.2021	Duration	30 Hours
Organized Department	Electrical and Electronics Engineering		
Participant Year: 2,3,4	No. of Students Registered :		46
Venue:	Power System Simulation Lab, Ground floor online mode Google Meet: meet.google.com/333-5625-245		
<b>Outcome of Value Added Course (VAC): At the end of the Course, Students can able to</b>			
<ol style="list-style-type: none"><li>1. Describe the concepts of IoT along with its applications.</li><li>2. Build a prototype using Arduino Uno.</li><li>3. Identify different types of sensors, actuators and communication Protocols.</li><li>4. Build a prototype using Raspberry pi.</li><li>5. Able to design an IoT application to interact.</li></ol>			
<b>Assessment Process</b>			
<ul style="list-style-type: none"><li>• 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</li><li>• Total Score = (0.5 *Attendance in VAC out of 100 percentage + 0.5 *Test mark in VAC out of 100 marks)</li></ul>			
 VAC Coordinator	 HOD/EEE	 Principal	

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Principal  
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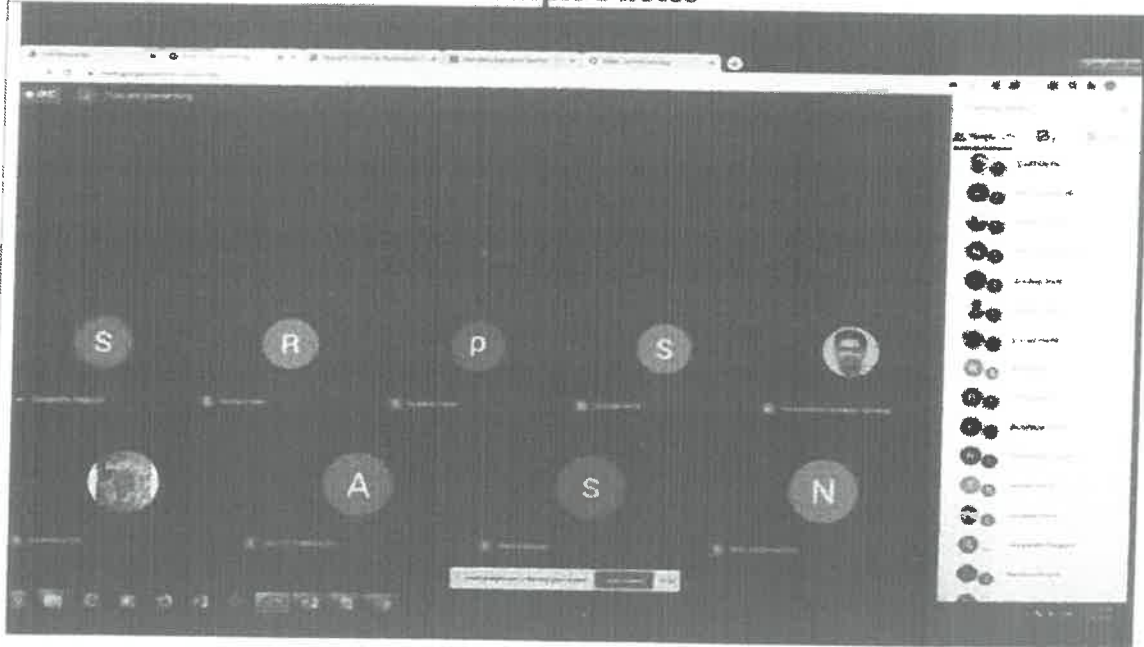
# Indra Ganesan

**COLLEGE OF ENGINEERING**  
Madurai Main Road (NH-45B), Manikandam, Trichy-12.  
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## Sample Photos of Value Added Course

Title:	"IoT-Raspberry Pi "				
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## Sample Photos



  
VAC Coordinator

  
HOD/EEE

  
Principal


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

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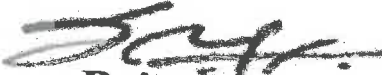


## CERTIFICATE OF PARTICIPATION

This is to certify that Ms. KUMARIVALLI T, IV Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr. ARUN SEBASTIN P, IV Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Ms. DEEPIKA G, IV Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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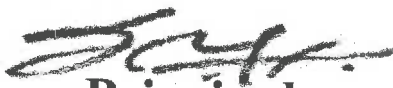
  
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This is to certify that Ms. MEKALA M, IV Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.


  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. VISWANATH R, IV Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr. SANJEEV KUMAR R, IV Year, EEE has successfully completed the Value Added Course on “**IoT-Raspberry Pi**” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. YUVARAJ S, III Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.


  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. MANIKANDAN N, III Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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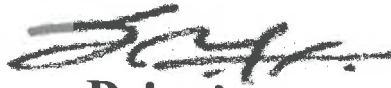




## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. SASIKUMAR R, III Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. SIVAKUMAR P, III Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. PADMANABAN A, III Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Mr. VEERA RAGAVAN A, III Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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## CERTIFICATE OF PARTICIPATION

This is to certify that Ms. SOLAIMATHI .K, II Year, EEE has successfully completed the Value Added Course on “**IoT-Raspberry Pi**” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr. BARATH M, II Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr. MANIKANDAN K, II Year, EEE has successfully completed the Value Added Course on “**IoT-Raspberry Pi**” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr. SALAMON A, II Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr.SARAVANAKUMAR M, II Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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This is to certify that Mr. DHEVENTHIRAN .P, II Year, EEE has successfully completed the Value Added Course on “IoT-Raspberry Pi” organized by Department of Electrical & Electronics Engineering and IQAC of our Institution in Association with Sri Sai Software from 08<sup>th</sup> February 2021 to 12<sup>th</sup> February 2021 (5days) during the Academic year 2020-2021.

  
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