

SYLLABUS/
CURRICULUM



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to Anna University, Chennai)

Madurai - Sivagangal Highway, Arasanoor, Thirumansolai Post, Sivagangal Dt - 630 661, Tamilnadu
Mobile : 9842102628, 7373002628 Email info@psyec.edu.in Website : www.psyec.edu.in

City Office : 10, Pandian Saraswathi St, Sivagami Nagar, Narayanapuram, Madurai - 625 014. Telefax- 0452 2682338, Mobile : 98423-02628

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE SYLLABUS

ACADEMIC YEAR 2022-2023

VACECE2223LT-LORAWAN TECHNOLOGY

CHAPTER-1	Introduction to LoRaWAN Technology	7
	Overview of LoRaWAN and its advantages-Comparison with other IoT connectivity technologies- Use cases and applications of LoRaWAN	
CHAPTER-2	LoRaWAN Network Planning and Deployment	7
	Understanding coverage requirements-Site survey techniques for LoRaWAN deployment-Gateway placement and network architecture design-Regulatory considerations and compliance	
CHAPTER-3	LoRaWAN Application Development	7
	Introduction to LoRaWAN development kits and platforms-Hands-on session: Setting up development environment-Building LoRaWAN applications for sensor data collection and transmission-Integrating LoRaWAN with cloud platforms and IoT services	
CHAPTER-4	Case Studies and Industry Applications	7
	Smart agriculture: Soil monitoring, irrigation control-Smart cities: Environmental monitoring, waste management-Asset tracking and supply chain management-Industrial IoT: Predictive maintenance, remote monitoring	
CHAPTER-5	Project Showcase and Optimization Strategies	7
	Presentation of individual or group projects-Optimization techniques for LoRaWAN networks- Scalability considerations and future trends in LoRaWAN technology	
CHAPTER-6	Assessment	7
	Weekly hands-on exercises and labs-Mid-term project: Design and deploy a LoRaWAN network for a specific industry application-Final project: Develop a value-added IoT solution using LoRaWAN technology and present a business case for its deployment	

TOTAL: 35Hrs


COURSE COORDINATOR


HOD/ECE


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ENGINEERING COLLEGE
Arasanoor, Thirumansolai P.O.-630 661
Sivagangal, Dist. Tamilnadu



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING COURSE SCHEDULE

VACECE2223LT-LORAWAN TECHNOLOGY


DATE	TIME	SYLLABUS
20.02.2023	9.00AM TO 1.00PM	Overview of LoRaWAN and its advantages-Comparison with other IoT connectivity technologies-Use cases and applications of LoRaWAN
	2.00PM TO 5.00PM	
21.02.2023	9.00AM TO 1.00PM	Understanding coverage requirements-Site survey techniques for LoRaWAN deployment-Gateway placement and network architecture design-Regulatory considerations and compliance
	2.00PM TO 5.00PM	
22.02.2023	9.00AM TO 1.00PM	Introduction to LoRaWAN development kits and platforms-Hands-on session: Setting up development environment-Building LoRaWAN applications for sensor data collection and transmission-Integrating LoRaWAN with cloud platforms and IoT services
	2.00PM TO 5.00PM	
23.02.2023	9.00AM TO 1.00PM	Smart agriculture: Soil monitoring, irrigation control-Smart cities: Environmental monitoring, waste management-Asset tracking and supply chain management-Industrial IoT: Predictive maintenance, remote monitoring
	2.00PM TO 5.00PM	
24.02.2023	9.00AM TO 1.00PM	Presentation of individual or group projects-Optimization techniques for LoRaWAN networks-Scalability considerations and future trends in LoRaWAN technology
	2.00PM TO 5.00PM	
25.02.2023	9.00AM TO 1.00PM	Weekly hands-on exercises and labs-Mid-term project: Design and deploy a LoRaWAN network for a specific industry application-Final project: Develop a value-added IoT solution using LoRaWAN technology and present a business case for its deployment
	2.00PM TO 5.00PM	

Tea Break: 10:40 am to 10:55am & 02:45 pm to 15:00 pm
Lunch Break: 12:30pm to 01:00pm

TOTAL: 35hrs


COURSE COORDINATOR


HOD/ECE


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2022- 2023

One page Report

Name of the course : LORAWAN TECHNOLOGY
Course Code : VACECE2223LT
Resource Person : Ms.P.PADMASRI, AP/ECE ,PSYEC
Course Coordinator : Ms. M.DHIVYA BHARATHI,AP/ECE
Date/Duration : 20.02.2023-25.02.2023— 35 hours


I here affirm that the Final-year students of strength 22 have been taught the value-added course title "LORAWAN TECHNOLOGY" as per the syllabus and completed within the stipulated time duration.

I confirm that the value-added course titled "LORAWAN TECHNOLOGY" has been conducted in the beginning of the semester and course delivery along with the attendance of the students was recorded.

I confirmed that all the students were actively participated in the course and the eligible students were certified for the course.


COURSE COORDINATOR


HOD/ECE


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Arasanoor, Thirumansolai P.O-630 561
Sivagangai Dist. Tamilnadu

ASSESSMENT PROCEDURE



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ASSESSMENT QUESTION WITH ANSWER

VACECE2223LT - LORAWAN TECHNOLOGY

1. What is the primary advantage of LoRaWAN technology for IoT applications?

- a) High data rate
- b) Low power consumption
- c) Short-range communication
- d) High bandwidth

Answer: b) Low power consumption

2. Which of the following is NOT a device class in LoRaWAN?

- a) Class A
- b) Class B
- c) Class C
- d) Class D

Answer: d) Class D

3. What is the role of a LoRaWAN gateway in the network?

- a) Manage device authentication
- b) Store data from end devices
- c) Forward messages between end devices and network server
- d) Perform encryption of data packets

Answer: c) Forward messages between end devices and network server

4. Which modulation technique is used in LoRaWAN for long-range communication?

- a) Frequency Shift Keying (FSK)
- b) Amplitude Shift Keying (ASK)

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c) Phase Shift Keying (PSK)

d) Chirp Spread Spectrum (CSS)

Answer: d) Chirp Spread Spectrum (CSS)

5. What is the purpose of the Adaptive Data Rate (ADR) mechanism in LoRaWAN?

a) To adjust the transmission power of end devices

b) To dynamically change the spreading factor based on network conditions

c) To synchronize the clocks of different devices in the network

d) To encrypt the payload of data packets

Answer: b) To dynamically change the spreading factor based on network conditions

6. Which component of the LoRaWAN architecture is responsible for managing device authentication and security keys?

a) Network Server

b) Gateway

c) End Device

d) Application Server

Answer: a) Network Server

7. What type of messages are used for device-to-gateway communication in LoRaWAN?

a) Uplink messages

b) Downlink messages

c) Control messages

d) Join-request messages

Answer: a) Uplink messages

8. In LoRaWAN, what does the term "ADR" stand for?

a) Adaptive Data Rate

b) Advanced Device Registration

c) Automatic Data Routing

d) Adaptive Device Reliability

Answer: a) Adaptive Data Rate

9. Which of the following is an example of an IoT application that can benefit from LoRaWAN technology?


- a) Streaming video surveillance
- b) Indoor navigation system
- c) Soil moisture monitoring in agriculture.
- d) Voice-controlled home automation

Answer: c) Soil moisture monitoring in agriculture

10. How can LoRaWAN technology contribute to energy efficiency in IoT deployments?

- a) By using high-power devices
- b) By transmitting data over short distances
- c) By optimizing battery usage with low-power communication
- d) By relying on constant connection to the power

Answer: c) By optimizing battery usage with low-power communication


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ASSESSMENT TEST PAPER

VACECE2223LT - LORAWAN TECHNOLOGY

REGISTER NO: 912020106002

NAME OF THE STUDENT: Anitha

YEAR/SEM: III / VI

8/6

1. What is the primary advantage of LoRaWAN technology for IoT applications?

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b) Amplitude Shift Keying (ASK)

c) Phase Shift Keying (PSK)

d) Chirp Spread Spectrum (CSS)

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- d) By relying on constant connection to the power

8/6


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Arasanoor, Thirumaneelai P.O-630 561
Sivagangai Dist. Tamilnadu

Pandian Saraswathi yadav Engineering College, Arasanoor -630561

Department of Electronics and Communication Engineering

Student Performance Sheet

Academic Year : 2022-2023

Course Code : VACECE2223LT

Course Name : LORAWAN TECHNOLOGY

Duration of hours : 35

Period of Course : 20.02.2023-25.02.2023

Assessment Mark			Mark
SL No	Register Number	Student Name	
1	912020106001	AJAYKANNAN M	99
2	912020106002	ANITHA S	88
3	912020106003	ANTONY BRIGHTON N	79
4	912020106004	BHAVANI SRI G	89
5	912020106006	GOKULASUTHAN M	80
6	912020106007	GOWSALYA K	94
7	912020106008	KABILAN M	97
8	912020106009	KANIMOZHI D	99
9	912020106010	KARTHIKA V	85
10	912020106011	NANTHA KUMAR V	84
11	912020106012	NIVETHA T	89
12	912020106013	PREETHI VAASHINI M	90
13	912020106014	RANJITH P	80
14	912020106015	SARAN VP	79
15	912020106016	SARAVANAN K	75
16	912020106017	SATHISHKUMAR M	74
17	912020106018	SIVAN S	94
18	912020106019	SUJITHA B	89
19	912020106020	THILOTHAMA M	90
20	912020106021	VALARMATHI S	95
21	912020106301	ARUMUGAM	84
22	912020106302	HARIVISHNU K	73


Course coordinator


HOD/ECE


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Arasanoor, Thiruvananthapuram
Sivagangal Road

Enrollment
Student Name
List

Pandian Saraswathi yadav Engineering College, Arasanoor -630561

Department of Electronics and Communication Engineering

Student Registration Sheet

Academic Year : 2022-2023

Course Code : VACECE2223LT

Course Name : LORAWAN TECHNOLOGY

Duration of hours : 35

Period of Course : 20.02.2023-25.02.2023

Enrolled student list			Signature
Sl. No	Register Number	Student Name	
1	912020106001	AJAYKANNAN M	M. Anj.
2	912020106002	ANITHA S	S. Anitha.
3	912020106003	ANTONY BRIGHTON N	N. Anas.
4	912020106004	BHAVANI SRI G	G. Bhavani
5	912020106006	GOKULASUTHAN M	Gokulath. M.
6	912020106007	GOWSALYA K	K. Gowsalya
7	912020106008	KABILAN M	M. Kabilan
8	912020106009	KANIMOZHI D	D. Kanimozhi
9	912020106010	KARTHIKA V	V. Kartika
10	912020106011	NANTHA KUMAR V	V. Nanthan
11	912020106012	NIVETHA T	T. Nivetha
12	912020106013	PREETHI VAASHINI M	M. Preethi
13	912020106014	RANJITH P	P. Ranjith
14	912020106015	SARAN VP	VP. Saran
15	912020106016	SARAVANAN K	K. Saravanan
16	912020106017	SATHISHKUMAR M	M. Sathish
17	912020106018	SIVANI S	S. Sivani
18	912020106019	SUJITHA B	B. Sujitha
19	912020106020	THILOTHAMA M	M. Thilothama
20	912020106021	VALARMATHI S	S. Valarmathi
21	912020106301	ARUMUGAM	Arumugam
22	912020106302	HARIVISHNU K	K. Harivishnu

M. Dhya
Course coordinator

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Arasanoor, Thirumangal P.O-630 561
Sivagangal Dist. Tamilnadu

STUDENTS ATTENDANCE

Pandian Saraswathi yadav Engineering College, Arasanoor -630561

Department of Electronics and Communication Engineering

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACECE2223LT

Course Name : LORAWAN TECHNOLOGY

Duration of hours : 35

Period of Course : 20.02.2023-25.02.2023

Attendance Sheet			Date: 20/2/23					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912020106001	AJAYKANNAN M	Ajk	Ajk	Ajk	Ajk	Ajk	Ajk
2	912020106002	ANITHA S	Anithas	Anithas	Anithas	Anithas	Anithas	Anithas
3	912020106003	ANTONY BRIGHTON N	Aon	Aon	Aon	Aon	Aon	Aon
4	912020106004	BHAVANI SRI G	bh	bh	bh	bh	bh	bh
5	912020106006	GOKULASUTHAN M	G.M	G.M	G.M	G.M	G.M	G.M
6	912020106007	GOWSALYA K	G	G	G	G	G	G
7	912020106008	KABILAN M	Kabilan	kabilan	kabilan	kabilan	kabilan	kabilan
8	912020106009	KANIMOZHI D	D.kani	D.kani	D.kani	D.kani	D.kani	D.kani
9	912020106010	KARTHIKA V	V.K	V.K	V.K	V.K	V.K	V.K
10	912020106011	NANTHA KUMAR V	Nan	Nan	Nan	Nan	Nan	Nan
11	912020106012	NIVETHA T	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha
12	912020106013	PREETHI VAASHINI M	Preethi	Preethi	Preethi	Preethi	Preethi	Preethi
13	912020106014	RANJITH P	Ranjith	Ranjith	Ranjith	Ranjith	Ranjith	Ranjith
14	912020106015	SARAN VP	Saran VP	Saran VP	Saran VP	Saran VP	Saran VP	Saran VP
15	912020106016	SARAVANAN K	Saravanan	Saravanan	Saravanan	Saravanan	Saravanan	Saravanan
16	912020106017	SATHISHKUMAR M	Sath	Sath	Sath	Sath	Sath	Sath
17	912020106018	SIVANI S	S	S	S	S	S	S
18	912020106019	SUJITHA B	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha
19	912020106020	THILOTHAMA M	Thilo	Thilo	Thilo	Thilo	Thilo	Thilo
20	912020106021	VALARMATHI S	V	V	V	V	V	V
21	912020106301	ARUMUGAM	A	A	A	A	A	A
22	912020106302	HARIVISHNU K	H	H	H	A	A	A

Tea Break

FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break

12:15 pm to 01:00pm

M. Dhuja
Course coordinator
Dhuja

S. S. S.
HOBCE

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Department of Electronics and Communication Engineering

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Academic Year : 2022-2023

Course Code : VACECE2223LT

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Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912020106001	AJAYKANNAN M	Aj	Aj	Aj	Aj	Aj	Aj
2	912020106002	ANITHA S	Anithas	Anithas	Anithas	Anithas	Anithas	Anithas
3	912020106003	ANTONY BRIGHTON N	Am	Am	Am	Am	Am	Am
4	912020106004	BHAVANI SRI G	bh	bh	bh	bh	bh	bh
5	912020106006	GOKULASUTHAN M	G.M.	G.M.	G.M.	G.M.	G.M.	G.M.
6	912020106007	GOWSALYA K	G	G	G	G	G	G
7	912020106008	KABILAN M	Kabilan	Kabilan	Kabilan	Kabilan	Kabilan	Kabilan
8	912020106009	KANIMOZHI D	D.Kani	D.Kani	D.Kani	D.Kani	D.Kani	D.Kani
9	912020106010	KARTHIKA V	V.K	V.K	V.K	V.K	V.K	V.K
10	912020106011	NANTHA KUMAR V	Nan	Nan	Nan	Nan	Nan	Nan
11	912020106012	NIVETHA T	AB	AB	AB	AB	AB	AB
12	912020106013	PREETHI VAASHINI M	Preethi	Preethi	Preethi	Preethi	Preethi	Preethi
13	912020106014	RANJITH P.	Ranji	Ranji	Ranji	Ranji	Ranji	Ranji
14	912020106015	SARAN VP	Saran VP	Saran VP	Saran VP	Saran VP	Saran VP	Saran VP
15	912020106016	SARAVANAN K	Saravana	Saravana	Saravana	Saravana	Saravana	Saravana
16	912020106017	SATHISHKUMAR M	AB	AB	AB	AB	AB	AB
17	912020106018	SIVANI S	S	S	S	S	S	S
18	912020106019	SUJITHA B	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha
19	912020106020	THILOTHAMA M	Thilo	Thilo	Thilo	Thilo	Thilo	Thilo
20	912020106021	VALARMATHI S	V	V	V	V	V	V
21	912020106301	ARUMUGAM	Am	Am	Am	Am	Am	Am
22	912020106302	HARIVISHNU K	Hari Vish	Hari Vish	Hari Vish	Hari Vish	Hari Vish	Hari Vish

Tea Break


FN- 11:00 am to 11:15am & AN-03:00-pm to 03:15 pm

Lunch Break

12:15 pm to 01:00pm


Course coordinator


HOD VACE


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Pandian Saraswathi yadav Engineering College, Arasanoor - 630561
 Department of Electronics and Communication Engineering

Student Attendance Sheet

Academic Year : 2022-2023
 Course Code : VACECE2223LT
 Course Name : LORAWAN TECHNOLOGY
 Duration of hours : 35
 Period of Course : 20.02.2023-25.02.2023

Date: 22/2/23

Attendance Sheet			09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912020106001	AJAYKANNAN M	Ajm	Ajm	Ajm	Ajm	Ajm	Ajm
2	912020106002	ANITHA S	Anitha	Anitha	Anitha	Anitha	Anitha	Anitha
3	912020106003	ANTONY BRIGHTON N	An	An	An	An	An	An
4	912020106004	BHAVANI SRI G	bl	bl	bl	bl	bl	bl
5	912020106006	GOKULASUTHAN M	G.M	G.M	G.M	G.M	G.M	G.M
6	912020106007	GOWSALYA K	@	@	@	@	@	@
7	912020106008	KABILAN M	kabilan	kabilan	kabilan	kabilan	kabilan	kabilan
8	912020106009	KANIMOZHI D	D.kani	D.kani	D.kani	D.kani	D.kani	D.kani
9	912020106010	KARTHIKA V	V.K	V.K	V.K	V.K	V.K	V.K
10	912020106011	NANTHA KUMAR V	Non	Non	Non	Non	Non	Non
11	912020106012	NIVETHA T	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha
12	912020106013	PREETHI VAASHINI M	Preethi	Preethi	Preethi	Preethi	Preethi	Preethi
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16	912020106017	SATHISHKUMAR M	Sath	Sath	Sath	Sath	Sath	Sath
17	912020106018	SIVANI S	S	S	S	S	S	S
18	912020106019	SUJITHA B	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha
19	912020106020	THILOTHAMA M	Thilo	Thilo	Thilo	Thilo	Thilo	Thilo
20	912020106021	VALARMATHI S	V	V	V	V	V	V
21	912020106301	ARUMUGAM	A	A	A	A	A	A
22	912020106302	HARIVISHNU K	Harivish	Harivish	Harivish	Harivish	Harivish	Harivish

Tea Break FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm
 Lunch Break 12:15 pm to 01:00pm

M. Dharma
 Course coordinator

HOD/ECE

PRINCIPAL
 PANDIAN SARASWATHI YADAV
 ENGINEERING COLLEGE
 Arasanoor, Thirumansolei P.O-630 561
 Sivagangai Dist. Tamilnadu

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACECE2223LT

Course Name : LORAWAN TECHNOLOGY

Duration of hours : 35

Period of Course : 20.02.2023-25.02.2023

Attendance Sheet			Date: 23/2/23					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912020106001	AJAYKANNAN M	Ajm	Ajm	Ajm	Ajm	Ajm	Ajm
2	912020106002	ANITHA S	Anitha.s	Anitha.s	Anitha.s	Anitha.s	Anitha.s	Anitha.s
3	912020106003	ANTONY BRIGHTON N	An	An	An	An	An	An
4	912020106004	BHAVANI SRI G	bh	bh	bh	bh	bh	bh
5	912020106006	GOKULASUTHAN M	G.M	G.M	G.M	G.M	G.M	G.M
6	912020106007	GOWSALYA K	@	@	@	@	@	@
7	912020106008	KABILAN M	Kabilan	Kabilan	Kabilan	Kabilan	Kabilan	Kabilan
8	912020106009	KANIMOZHI D	D.Kani	D.Kani	D.Kani	D.Kani	D.Kani	D.Kani
9	912020106010	KARTHIKA V	V.v	V.v	V.v	V.v	V.v	V.v
10	912020106011	NANTHA KUMAR V	Nan	Nan	Nan	Nan	Nan	Nan
11	912020106012	NIVETHA T	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha
12	912020106013	PREETHI VAASHINI M	Preethi	Preethi	Preethi	Preethi	Preethi	Preethi
13	912020106014	RANJITH P	Ranji	Ranji	Ranji	Ranji	Ranji	Ranji
14	912020106015	SARAN VP	Saran.VP	Saran.VP	Saran.VP	Saran.VP	Saran.VP	Saran.VP
15	912020106016	SARAVANAN K	Saravana	Saravana	Saravana	Saravana	Saravana	Saravana
16	912020106017	SATHISHKUMAR M	Sath	Sath	Sath	Sath	Sath	Sath
17	912020106018	SIVANI S	S	S	S	S	S	S
18	912020106019	SUJITHA B	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha
19	912020106020	THILOTHAMA M	Thilo	Thilo	Thilo	Thilo	Thilo	Thilo
20	912020106021	VALARMATHI S	V	V	V	V	V	V
21	912020106301	ARUMUGAM	A	A	A	A	A	A
22	912020106302	HARIVISHNU K	HariVish	HariVish	HariVish	HariVish	HariVish	HariVish

Tea Break

FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break

12:15 pm to 01:00pm

M. Dhya
Course coordinator

HOD/ECE

PRINCIPAL

PRINCIPAL
PANDIAN SARASWATHI YADAV
ENGINEERING COLLEGE
Arasanoor, Thirumansolai P.O-630 561
Sivagangai Dist. Tamilnadu

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACECE2223LT

Course Name : LORAWAN TECHNOLOGY

Duration of hours : 35

Period of Course : 20.02.2023-25.02.2023

Attendance Sheet			Date: 25/2/22					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912020106001	AJAYKANNAN M	Ajm	Ajm	Ajm	Ajm	Ajm	Ajm
2	912020106002	ANITHA S	Anithas	Anithas	Anithas	Anithas	Anithas	Anithas
3	912020106003	ANTONY BRIGHTON N	Antn	Antn	Antn	Antn	Antn	Antn
4	912020106004	BHAVANI SRI G	bh	bh	bh	bh	bh	bh
5	912020106006	GOKULASUTHAN M	G.M	G.M	G.M	G.M	G.M	G.M
6	912020106007	GOWSALYA K	G	G	G	G	G	G
7	912020106008	KABILAN M	kabilan	kabilan	kabilan	kabilan	kabilan	kabilan
8	912020106009	KANIMOZHID	D.Kani	D.Kani	D.Kani	D.Kani	D.Kani	D.Kani
9	912020106010	KARTHIKA V	V.K	V.K	V.K	V.K	V.K	V.K
10	912020106011	NANTHA KUMAR V	Nan	Nan	Nan	Nan	Nan	Nan
11	912020106012	NIVETHA T	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha	Nivetha
12	912020106013	PREETHI VAASHINI M	Preethi	Preethi	Preethi	Preethi	Preethi	Preethi
13	912020106014	RANJITH P	Ranjith	Ranjith	Ranjith	Ranjith	Ranjith	Ranjith
14	912020106015	SARAN VP	Saran VP	Saran VP	Saran VP	Saran VP	Saran VP	Saran VP
15	912020106016	SARAVANAN K	Saravana	Saravana	Saravana	Saravana	Saravana	Saravana
16	912020106017	SATHISHKUMAR M	Sath	Sath	Sath	Sath	Sath	Sath
17	912020106018	SIVANI S	S	S	S	S	S	S
18	912020106019	SUJITHA B	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha	Sujitha
19	912020106020	THILOTHAMA M	Thilo	Thilo	Thilo	Thilo	Thilo	Thilo
20	912020106021	VALARMATHI S	V	V	V	V	V	V
21	912020106301	ARUMUGAM	A	A	A	A	A	A
22	912020106302	HARIVISHNU K	Hari Vish	Hari Vish	Hari Vish	Hari Vish	Hari Vish	Hari Vish

Tea Break

FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break

12:15 pm to 01:00pm

M. Dhanya
Course coordinator

[Signature]
HOD/ECE

PRINCIPAL
PANDIAN SARASWATHI YADAV
ENGINEERING COLLEGE
Arasanoor, Thirumansolai P.O-630 561
Swagangai Dist. Tamilnadu

MODEL
CERTIFICATES

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE
ARASANOOR, SIVAGANGAI-MADURAI HIGHWAYS, TAMIL NADU-630561

certificate of completion

This certificate is proudly presented to

Mr. Ajaykannan

Has Successfully completed the Value Added Certified Course on LORAWAN
TECHNOLOGIES During **20.02.2023 to 25.02.2023**



Dr S.MANIKANDAN
HOD/ECE



Dr.R.RAJA

PR PRINCIPAL
PANDIAN SARASWATHI YADAV
ENGINEERING COLLEGE

R RAJA

Digitally signed
by R RAJA
Date: 2024.06.27
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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

ARASANOOR,SIVAGANGAI-MADURAI HIGHWAYS,TAMIL NADU-630561

certificate of completion


This certificate is proudly presented to

Ms.Shivani

Has Successfully completed the Value Added Certified Course on LORAWAN
TECHNOLOGIES During 20.02.2023 to 25.02.2023



Dr S.MANIKANDAN
HOD/ECE



Dr.R.RAJA
PRINCIPAL
PANDIAN SARASWATHI YADAV
ENGINEERING COLLEGE

R RAJA

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RAJA
Date: 2024.06.27
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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

ARASANOOR, SIVAGANGAI-MADURAI HIGHWAYS, TAMIL NADU-630561

certificate of completion

This certificate is proudly presented to

Mr. Kabilan

Has Successfully completed the Value Added Certified Course on LORAWAN
TECHNOLOGIES During 20.02.2023 to 25.02.2023



Dr S.MANIKANDAN

HOD/ECE



Dr. R. RAJA
PRINCIPAL
PANDIAN SARASWATHI YADAV
ENGINEERING COLLEGE
Arasanoor, Thirumangaloor P.O-630561
Sivagangai Dist. Tamil Nadu

R RAJA

Digitally signed
by R RAJA
Date: 2024.06.27
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