DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Academic Year 2024-2025 Odd semester

INDUSTRY CERTIFIED

VALUE ADDED COURSE

On

IOT AND ITS APPLICATIONS

2022-2026 Batch Students

III EEE

Number of Participants: 32

COURSE COORDINATORS

Er.T.Hari Prasath, AP / EEE

HOD /EEE

Dr. D. Prince Winston Prof / EEE

Verified
21/8/2024
S. Akilaudhi.
VAC Incharge.

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY ®

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Academic Year 2024-2025 Odd semester

Guidelines for Value Added Courses:

1	**Academic Year**	:2024-2025
2	**Regulations**	:R2021
3	**Department Name**	: Electrical and Electronics Engineering
4	**Name of the Value - Added Course**	: IoT and its Applications
5	**Number of Credits**	: 2
6	**Category**	~~Theory/Lab~~/Hands- on/~~Skill based etc.~~
7	**Name and Details of the Joint – Organization (Industry/NGO etc) if any**	Quantanics Techserv Private Limited, Madurai
8	**Resource Person Details:**	Er. Sujitha, Trainer Quantanics Techserv Pvt.Ltf
9	**VAC Coordinator Details**	Dr.A. Rajavel AP/EEE
10	**Course Coordinator Details**	Er. T. Hari Prasath AP/EEE
11	**Duration (30H Mandatory)**	48 Hours
12	**Period(From- To)**	08-07-2024 to 13-07-2024 (6 Days)
13	**Venue**	Power System Simulation Laboratory

Course Coordinator
(T.HARI PRASATH)

HOD - EEE
D. Prince Winston

DEAN Academics 24/8/24

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Industry Certified Value Added Course

on

IOT AND ITS APPLICATIONS

08-07-2024 to 13-07-2024

Enclosures:

S.No.	Checklist	Availability
1	Institutional approval copy	Yes
2	Circular	Yes
3	Syllabus copy with Course Outcomes	Yes
4	BoS Approval	Yes
5	Minutes of Three member Committee	Yes
6	Geo-tagged Photos	Yes
7	Certificate of all participants	Yes
8	Examination Schedule	NA
9	Question and Answers	Yes
10	Attendance Sheet	Yes
11	Evaluated Answer sheet	Yes
12	Test Report	Yes
13	Mark Statement	Yes
14	Grade Sheet	N/A
15	Feedback form	Yes
16	Feedback Analysis and Report	Yes
17	Program Summary / Report	Yes
18	Student's Oral Feedback (Recorded Video)	No
19	VAC –Short Video	Yes
20	Settlement to	Yes

Dr.A.Rajaral.

Dr.D. PrinceWinbe

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

(Accredited by NBA, New Delhi)

In association with Quantanics Techserv Pvt Ltd, Madurai.

Value Added Course on "IoT and its Applications"

2024-25 ODD Semester (July 2024)

List of Qualified Students

S.No.	Register Number	Roll Number	Name of the student
1	920422105005	22UEE001	HARI KUMARAN S
2	920422105001	22UEE002	ABDUL RAHMAN FAISAL F
3	920422105025	22UEE003	VISHAAL S
4	920422105013	22UEE004	MANJULADEVI P
5	920422105008	22UEE005	KANKESHRAJ A
6	920422105014	22UEE007	MUKILAN M
7	920422105004	22UEE008	DEEPAVISHALI S
8	920422105012	22UEE009	MADHUMITHA M
9	920422105011	22UEE010	M LAVANYA
10	920422105016	22UEE011	PAUL EBINESH G
11	920422105022	22UEE012	V K SUDHARSAN
12	920422105010	22UEE013	KESAVAN M
13	920422105015	22UEE014	S PARTHA SARATHY
14	920422105019	22UEE015	RAM V
15	920422105024	22UEE016	VIGNESH S
16	920422105020	22UEE017	SANTHIYA J

S.No.	Register Number	Roll Number	Name of the student
17	920422105009	22UEE018	KARUPPASAMY S
18	920422105006	22UEE019	HARIBASKARAN A
19	920422105002	22UEE020	AMUTHAN N
20	920422105003	22UEE021	CHARUPRIYA G
21	920422105023	22UEE022	THAMEESH AHAMED M
22	920422105021	22UEE023	SETHU PATHI M
23	920422105007	22UEE024	HARISH KUMAR K
24	920422105017	22UEE025	POOJA K
25	920422105018	22UEE026	PREM G
26	920422105307	22UEE027	YOGAN DHANUSH M
27	920422105304	22UEE028	JOHN RAJ S
28	920422105306	22UEE029	MANI KANDAN K
29	920422105303	22UEE030	JIM ALLEN D J
30	920422105305	22UEE031	JOSHUA RAJ R
31	920422105301	22UEE032	HARIKUMARAN M
32	920422105302	22UEE033	HARISH KUMAR V

Staff In-Charge
Dr. A. Rajavel

HOD/EEE
Dr. D. Prince Winston

APPROVAL BOOK

Book No.

EEE

Date 18 - 05 - 2024

SL.No. **18**

Requisition to conduct Value Added Course (2024-25 ODD Semester) on "IOT and its applications" by Quantanics Techserv Private Limited, Madurai. This course will make the students to do consultancy/Project work in IoT based industries. Food and transport would require for resource persons at free of cost.

Details:

Batch Strength : 32 (III year)

Duration : 6 days (08-07-24 to 13-07-24)

course fee + project kit : 1500 (Proposal enclosed)

Total amount + GST (18%.) Student : (1500 × 32) + 8640 = 56,640

Signature of Staff 18/05/24
[S. JEGAN]

HoD

PRINCIPAL 20/5/24

OFFICE USE

Value Added Course Expen

1) Account Head :

2) Budget allotted :

3) Amount committed / Spent sofar :

4) Balance available :

Administrative Officer

Secretary

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05-07-2024

CIRCULAR

The Department of Electrical and Electronics Engineering of Kamaraj College of Engineering and Technology organizes 6 day Value added course for III EEE from 08-07-2024 to 13-07-2024. The detail of the course is given below.

Name of Value added course	Conducted by	Venue
Iot and its Applications	Quantanics Techserv Private Limited, Madurai	PSS Lab, D Block IV floor

HoD / EEE

Copy to:

1. To be read in III EEE class room
2. Circulated to all the EEE teaching faculty members through their email ID.
3. HoD / EEE
4. File

QUOTATION

Ref No: QN/2024 /MAY/08   Date: 13/05/2024

To

The Principal,

Kamaraj College of Engineering and Technology

Virudhunagar.

Dear Sir,

With reference to the discussion we had with you, we hereby quote our best offer

S.No	Description	Qty	Unit Cost in Rs.	Total Amount in Rs.
1	IOT Value Added Courses with project kit per batch	32	1500	48,000
			Taxable Value	48,000
			GST 18%	8,640
			Total Amount in Rs.	56,640

Terms and conditions:

1. Validity   : 15 Days from the date of quotation
2. Delivery   : 1 Months from the date of the Advance payment

We look forward to the pleasure of receiving your valuable order at an early date. Thanking you and assuring you of our best services at all times.

If you have any further queries feel free to contact us.

Thanks & Regards

A.Kesavan

CEO

IoT Introduction

IoT Introduction - Basics of ATMEL328p C Programming - Basic Electronics Setting up Arduino IDE - LED Blinking Traffic Light System Diving deep into ATMEL328p C programming (functions) LED control using push button – Motor switching on using relay C pointers - arrays and memory allocation.

Sensors and Types of ATMEL Controller

Temperature sensor to display temperature - ESP 32/ ESP8266 architecture- LED and Switch Control basics using push buttons, interfacing soil moisture sensor to check soil moisture. Interfacing Turbidity sensor for checking water turbidity.

Embedded Platform Introduction and dive in

Arduino IDE introduction - Boards types - Basic Electronics, Tools and Sensors - Setting up Arduino IDE - LED Blinking - Diving deep into C programming (functions) LED control using push button

Sensors and Types of Arduino Controller

Temperature sensor to display temperature - ESP 32/ ESP8266 architecture- LED and Switch Control basics using ESP Display Interfacing - 7 segment - LCD display - Keypad – Arduino IOT Could Mobile App introduction with example- Arduino Cloud Introduction with example

IoT Protocols and Applications

ADC Conversion - keypad relay control - USART - USART Communication Timer – Counter Clock - PWM - PWM Example - Project GSM - GPS GSM - GPS data - Microcontroller EEPROM - Storing Wifi Credentials in EEPROM -I2C - RTC time from RTC - NTP - NODEMCU IOT –Raspberry pi, NVIDIA Jetson Nano - Temperature & Humidity - PIR CLOUD – MQTT - Home automation - Robot control

Department of Electrical and Electronics Engineering

Title of the Program : Value Added Course on "IoT and its applications   **Date: 08.07.2024 to 13.07.2024 (6Days)**

Participants : III year (2022 – 2026 Batch)   **Academic Year: 2024 – 2025 ODD**

Conducted by : Quantanics Techserv, Madurai.   **Venue : Power System Simulation Lab**

Course Outcomes

Students will be able to

Course Outcomes		Details
CO1	:	Gain a solid understanding of IoT fundamentals and microcontroller programming.
CO2	:	Develop practical skills in interfacing various sensors and actuators.
CO3	:	Master advanced C programming techniques specific to IoT applications.
CO4	:	Be proficient in using Arduino IDE and integrating IoT devices with cloud services.
CO5	:	Be capable of designing and developing complete IoT products and systems.

Coordinators

A. Rajavel

HoD/EEE

D. Prince winston

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Department of Electrical and Electronics Engineering

(Accredited by NBA, New Delhi)

Submitted to the Principal through Dean (Academic Courses)

Sub: Requisition to recommend " **IoT and its Applications** " for 2022 – 2026 Batch

III year UG candidates in 2024 – 2025 ODD semester.

As per the current needs in industry, we need to provide the **Value added course for** 2022 – 2026 Batch III year UG candidates in 2024 – 2025 ODD Semester. In connection with this clause, three members committee has been constituted to scrutinize the **Value added course** evaluation, meeting has been convened on 08-07-2024 **(01.30 PM to 02.30 PM)** at PG14, Academic Block – D, EEE Department, Kamaraj College of Engineering and Technology, Virudhunagar.

Members List

S. No.	Members	Category	Signature
1	Dr. D. Prince Winston, Head & Prof./EEE	Head of the Department	
2	Dr.B.Gurukarthik babu, ASP / EEE	PG chairperson	
3	Mr.R.Ganesan, AP / EEE	UG course coordinator	

The three member committee has recommended the Value added course "**IoT and its Applications**" (2024 – 2025 ODD semester) for 2022 – 2026 Batch.

HoD/EEE

Dr. D. prince Winshon.

Dean (Academic Courses)

Dr. R. Swesh Baby.

Principal

Dr. S. Senth

Date: 05.07.2024

Department of Electrical and Electronics Engineering

(Accredited by NBA, New Delhi)

Submitted to the Principal through Dean (Academic Courses)

Sub: Requesting permission to nominate the three member committee for **Value added course** – 2022 – 2026 Batch III year UG candidates in 2024 – 2025 ODD Semester – Reg.

As per the current needs in industry, we need to provide the **Value added course for** 2022 – 2026 Batch III year UG candidates in 2024 – 2025 ODD Semester. In connection with this clause, three members committee has been constituted to scrutinize the **Value added course** evaluation.

Members List

S. No.	Members	Category
1	Dr. D. Prince Winston, Head & Prof./EEE	Head of the Department
2	Dr.B.Gurukarthik babu, ASP / EEE	PG chairperson
3	Mr.R.Ganesan, AP / EEE	UG course coordinator

We hereby request you to provide permission to nominate the above said three members committee to review the **Value added course**.

HoD/EEE

Dr. D. Prince Wistn

Dean (Academic Courses)

Dr. R. Suresh Babu.

Principal

Dr. S. Senthil.

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Department of Electrical and Electronics Engineering

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In association with Quantanics Techserv Pvt Ltd, Madurai.

Value Added Course on "IoT and its Applications"

2024-25 ODD Semester (July 2024)

Class: III EEE (2022-2026) Batch

Day 1- 08.07.2024 (Introduction)	Day 2- 09.07.2024 (Installation)
Day 3- 10.07.2024 (Study on Protocols)	**Day 4- 11.07.2024 (Working with Sensors)**

Day 5- 12.07.2024 (Project)	Day 6- 13.07.2024 (Valedictory)

Staff Incharge
Dr. D. Rajan

HoD / EEE
D. Prince winston

Day 1(10 marks)

What does MQTT stand for?

- Message Queuing Telemetry Transport

What does IoT stand for?

- Internet of Things

Which protocol is commonly used for IoT device communication?

- MQTT

What is a primary function of a sensor in an IoT system?

- To collect data from the environment

Which of the following is an example of an IoT device?

- Smart Refrigerator

What type of network is typically used for short-range IoT communication?

- PAN

Which of the following is a popular IoT development platform?

- Arduino

What is the role of an actuator in an IoT system?

- To perform actions based on data

Which wireless communication technology is known for its low power consumption, making it suitable for IoT devices?

- Bluetooth Low Energy (BLE)

What does the term "smart" in "smart devices" typically refer to?

- The device's ability to connect to the internet

Which cloud service is widely used for IoT applications?

- AWS IoT

Day 2(10 marks)

What does XAMPP stand for?

- Cross-Platform Apache MySQL PHP Perl

Which component of XAMPP is responsible for serving web pages?

- Apache

In XAMPP, which folder should you place your web application files to access them via a web browser?

- /htdocs

Which command is used to create a new database in MySQL?

- CREATE DATABASE dbname;

Which of the following is a valid data type in MySQL?

- TEXT

What does the acronym SQL stand for?

- Structured Query Language

What does MQTT stand for?

- Message Queue Telemetry Transport

Which of the following is not a quality of service (QoS) level in MQTT?

- At any time (3)

In MQTT, what term describes a message broker's storage of a client's subscription to a topic?

- Session State

Which protocol does MQTT typically use for its transport layer?

- TCP/IP

Which feature in Tinkercad allows you to create and simulate circuits with Arduino?

- Circuits

In Tinkercad Circuits, which component is commonly used to simulate a push-button input for Arduino projects?

- Push Button

Day 3 & 4(20 marks)

Define the term 'sensor'. Choose the most appropriate definition.

- a) Used to capture and can measure physical quantities

What type of sensor would be used in a washing machine?

- d) Water-level Sensor

In an automated system, what type of device is a sensor?

- a) Input device

Ultrasonic waves are a form of _____ waves.

- c) sound

The following are true about Ultrasonic sensor except one

- c) measure illuminance

Is this an example of INPUT or OUTPUT? Keyboard

- a) Input

What language is the Arduino IDE built on?

- a) C/C++

MQTT is:

- c) Based on publish-subscribe architecture

Which of the following are the three hardware signals?

- c) START, STOP, ACKNOWLEDGE

Identify the communication bus used in figure.

- d) I2C

SPI device communicates in _____.

- c) Full duplex

Does SPI have/has a single master?

- a) True

MOSI means _____.

- b) Line for master to send data to the slave

What rate can define the timing in the UART?

- a) baud rate

Communication in UART is

- a) Only duplex

An option of testing created virtual electronic circuits using virtual components

- d) Simulation

_____ are devices that detect and respond to changes in an environment. They're embedded in smart phones and an integral part of the Internet of Things (IoT).

- e) Sensors

IoT is the network of physical objects embedded with _____, which enables these objects to collect and exchange data.

- a) electronics
- d) software
- c) sensors
- b) network connectivity

Smartphones, Smartwatches, Cars, Refrigerators are all components of IoT

- b) True

It is used to restrict the flow of current to electrical components in a circuit.

- c) Resistor

Day 5&6(20 marks)

Which type of sensor is commonly used to measure the level of a liquid in a tank?

- b) Ultrasonic sensor

What is the primary function of a sensor in an electronic system?

- a) To convert physical quantities into electrical signals

Which sensor measures weight?

- b) Pressure Sensor

A servo motor is not a rotary actuator.

- b) False

Can a Servo Motor be used with robotic arm applications?

- b) True

Why does a single ultrasonic sensor have 2 "eyes" on it?

- a) One eye sends a signal and one receives it

When we print out the ultrasonic sensor data, what units are they in?

- b) centimeters

The speed of sound is _____ m/s.

- c) 340

The reflected wave is called the _____ wave.

- a) echo

What does the L in LCD stand for?

- d) Liquid

The LCD that comes with the Arduino is 16x2, what does the 2 mean?

- b) 2 lines

Which libraries do you need to use the i2c module?

- c) wire.h
- d) LiquidCrystal_I2C.h

In a database, Multiple _____ can be created.

- d) Tables

You have to enter Sam's DOB, What data type would you use for this field.

- b) Date

**Is integer a number?**

- b) True

What does MQTT signify?

- b) Message Queuing Telemetry Transport

QUANTANICS TECHSERV PVT LTD

Department of Electrical and Electronics Engineering
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In association with Quantanics Techserv Pvt Ltd, Madurai.
Value Added Course on "IoT and its Applications"- 08/07/2024 to 13/07/2024
Class-III-EEE(2022-2026)   Academic Year(2024-2025)   Regulation-2021

1.ESP32 - based smoke detector for enhanced fire safety monitoring
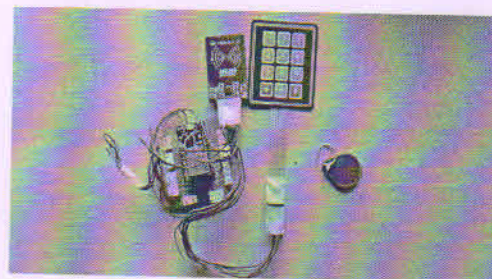
Abdul Rahman Faisal. F (22UEE002)
Amuthan. N (22UEE020)
Joshua Raj. R (22UEE031)
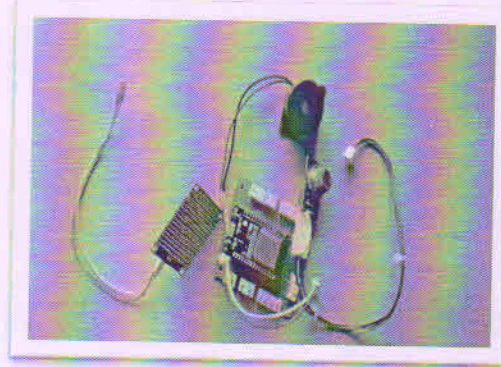
2.Servo motor – powered smart garage system for automated door control

Madhumitha. M (22UEE009)
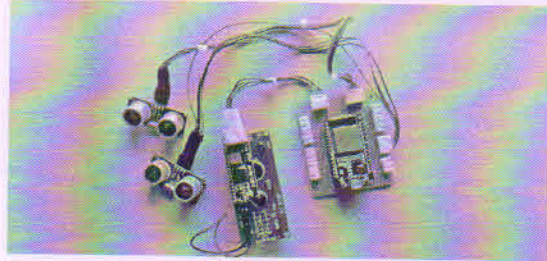Santhiya. J (22UEE017)
Charupriya. G(22UEE021)
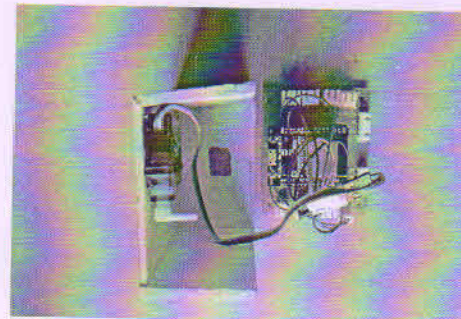
3.ESP32 RIFD - based smart attendance system for effective tracking

Deepavishali.S (22UEE008)
Lavanya.M (22UEE010)
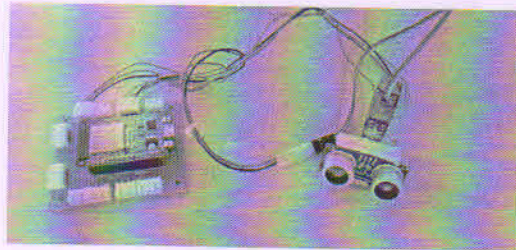Manjuladevi.P (22UEE004)
Pooja.K (22UEE025)

4. ESP32 - based people counter for accurate crowd measurment

Harikumaran.S (22UEE001)
Thameesh ahamed. M (22UEE022)
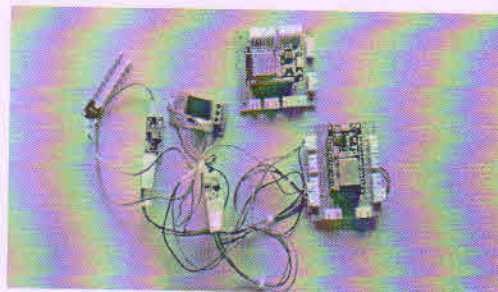Jim allen. D.J (22UEE030)
Kankeshraj.A (22UEE005)

5. ESP32 ultrasonic radar system for object detection and tracking

Haribaskaran.A (22UEE019)
Mukilan.M (22UEE007)
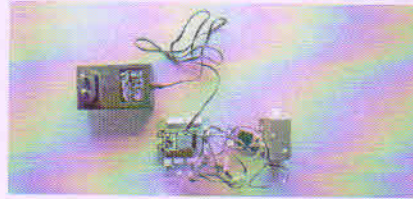Partha sarathy. S(22UEE014)

6. ESP32 - based water management system for efficient agricultural irrigation

Harish kumar. K (22UEE024)
Karuppasamy. S (22UEE018)
Harikumaran. K(22UEE032)
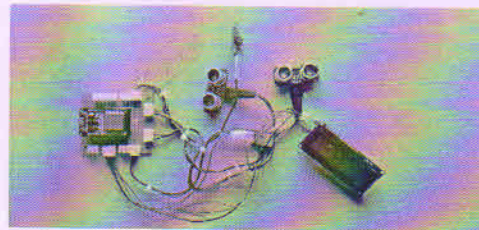Yogan Dhanush.M (22UEE027)

7.ESP32 web server – based automated door lock system for security

Prem. G (22UEE026)
Kesavan.M (22UEE013)
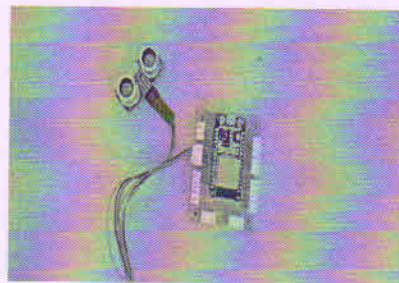John Raj. R (22UEE028)

8.ESP32 - based environment management system for monitoring

Ram. V (22UEE015)
Sudharsan.V.K (22UEE012)
Vishaal.S (22UEE003)
Mani kandan.K(22UEE029)

9.ESP32 - based OTA firmware integration

Paul ebinesh. G (22UEE011)
Sethu pathi. M (22UEE023)
Vignesh. S (22UEE016)
Harish Kumar. V (22UEE033)

IoT Day1 - Assessment

What does IoT stand for?

- ◯ Intranet of things
- ⦿ Internet of things
- ◯ Interval of Time
- ◯ Intrusion of Time

Which of the following is an example of an IoT device?

- ◯ Arduino
- ◯ IR Sensor
- ⦿ Smart Refrigerator
- ◯ Refrigerator

Which protocol is commonly used for IoT device communication?

- ⦿ MQTT
- ◯ I2C
- ◯ CAN
- ◯ ICT

✗

What type of network is typically used for short-range IoT communication?

- ◯ PAN
- ◯ MAN
- ⦿ WAN
- ◯ TIN

What is a primary function of a sensor in an IoT system?

- ◯ To control the environmental parameter
- ⦿ To collect the data from the environment
- ◯ To transfer the data from cloud to the controller
- ◯ To monitor the cloud parameter

Which of the following is a popular IoT development platform?

- ◯ Microprocessor 8085
- ◯ Microcontroller 8051
- ◯ PIC
- ⦿ Arduino

Google Forms

M. Lavanya

Dr. C. Rajan

9/10

What does MQTT stand for?

1 point

- ○ Message Queuing Transport Telemetry
- ◉ Message Queuing Telemetry Transport
- ○ Mutual Queuing Transport Telemetry
- ○ Mutual Queuing Telemetry Transport

What is the role of an actuator in an IoT system?

1 point

- ○ To monitor the environmental parameter
- ◉ To perform action based on data
- ○ To handle big data
- ○ All the above

What does the term "smart" in "smart devices" typically refer to?

1 point

- ○ Ability to handle large data
- ◉ device's ability to connect to the internet

Which cloud service is widely used for IoT applications?

1 point

- ◉ AWS
- ○ Thingspeak
- ○ Thingcloud

IoT Day 2- Assessment

What does XAMPP stand for?

1 point

- ● Cross-Platform Apache MySQL PHP Perl
- ○ Hexa decimal application
- ○ Independent platform app

Which command is used to create a new database in MySQL?

1 point

- ○ CREATE DATABASE
- ● CREATE NEW DATABASE
- ○ CREATE DATABASE dbname
- ○ CREATE NEW DATABASE dbname

Which component of XAMPP is responsible for serving web pages?

1 point

- ● Apache
- ○ AMP
- ○ XAM
- ○ HTML

Which of the following is a valid data type in MySQL?

1 point

- ● Text
- ○ Integer
- ○ Boolean
- ○ String

In XAMPP, which folder should you place your web application files to access them via a web browser?

1 point

- ○ htdocs
- ● /htdocs
- ○ .htdocs

What does the acronym SQL stand for?

1 point

- ● Structure Query Language
- ○ Sequence Query Language
- ○ Standard Query Language

In Tinkercad Circuits, which component is commonly used to simulate a push-button input for Arduino projects?

1 point

○ Option

◉ Push Button

○ Check box

○ Text Box

Google Forms

In MQTT, what term describes a message broker's storage of a client's subscription to a topic?

1 point

○ Presentation state

◉ Session State

○ Application state

Which protocol does MQTT typically use for its transport layer?

1 point

◉ TCP/IP

○ IP

○ OSI

Which feature in Tinkercad allows you to create and simulate circuits with Arduino?

1 point

○ create

○ open

◉ circuits

○ simulate

M. Lavay

9/9

Dr-E-Rajaul

IoT Day 3 & 4 Assessment

In an automated system, what type of device is a sensor?

- ◉ Input
- ○ Output
- ○ Both Input and Output

What language is the Arduino IDE built on?

- ○ Python
- ○ Java
- ◉ C/C++

SPI device communicates in _____ .

- ○ Half Duplex
- ◉ Full Duplex
- ○ parallel

In an automated system, what type of device is a sensor?

- ◉ Water level sensor
- ○ Water level
- ○ Door opening
- ○ Door closing

Define the term 'sensor'. Choose the most appropriate definition.

- ◉ Used to capture and can measure physical quantities
- ○ Used to control the physical quantities
- ○ Used to capture the image

The following are true about Ultrasonic sensor except one

- ○ measures sound
- ○ measures distance
- ◉ measures illuminance

Smartphones, Smartwatches, Cars, Refrigerators are all components of IoT

- ○ True
- ◉ False

It is used to restrict the flow of current to electrical components in a circuit.

2 points

⦿ Resistor

○ Inductor

○ Capacitor

○ All the above

An option of testing created virtual electronic circuits using virtual components

2 points

⦿ simulation

○ compilation

○ Testing

What rate can define the timing in the UART?

2 points

○ system rate

○ clock rate

⦿ baud rate

Google Forms

IoT 5-6 - Assessment

Which type of sensor is commonly used to measure the level of a liquid in a tank?

2 points

- ○ Load sensor
- ◉ ultrasonic sensor
- ○ IR sensor

What is the primary function of a sensor in an electronic system?

2 points

- ○ To convert electrical quantity into physical quantity
- ◉ To convert physical quantity into electrical quantity

Which sensor measures weight?

2 points

- ○ Proximity sensor
- ○ IR sensor
- ○ Ultrasonic senor
- ◉ Pressure sensor

A servo motor is not a rotary actuator

2 points

- ◉ True
- ○ False

The reflected wave is called the _____ wave.

2 points

- ◉ echo
- ○ trigger
- ○ pulse

What does the L in LCD stand for?

2 points

- ○ Light
- ◉ Liquid
- ○ limit

The LCD that comes with the Arduino is 16x2, what does the 2 mean?

2 points

- ○ 2 characters
- ○ 2 columns
- ◉ 2 lines

Which libraries do you need to use the i2c module?

2 points

☐ wire.h

☑ LiquidCrystall2C.h

☐ node.h

☑ string.h ✓

( )

The speed of sound is _____ m/s.

2 points

○ 240

○ 140

◉ 340

When we print out the ultrasonic sensor data, what units are they in?

2 points

○ m

○ mm

◉ cm

Google Forms

IoT Day1 - Assessment

What does IoT stand for?

○ Intranet of things

◉ Internet of things

○ Interval of Time

○ Intrusion of Time

Which protocol is commonly used for IoT device communication?

◉ MQTT

○ I2C

○ CAN

○ ICT

What is a primary function of a sensor in an IoT system?

○ To control the environmental parameter

◉ To collect the data from the environment

○ To transfer the data from cloud to the controller

○ To monitor the cloud parameter

Which of the following is an example of an IoT device?

○ Arduino

○ IR Sensor

◉ Smart Refrigerator

○ Refrigerator

What type of network is typically used for short-range IoT communication?

○ PAN

○ MAN

◉ WAN

○ TIN

Which of the following is a popular IoT development platform?

○ Microprocessor 8085

○ Microcontroller 8051

◉ PIC

○ Arduino

Google Forms

M. Resavan

A.
Dr. P. Rajan

8/10

What does MQTT stand for?

1 point

- ( ) Message Queuing Transport Telemetry
- (●) Message Queuing Telemetry Transport
- ( ) Mutual Queuing Transport Telemetry
- ( ) Mutual Queuing Telemetry Transport

What is the role of an actuator in an IoT system?

1 point

- ( ) To monitor the environmental parameter
- (●) To perform action based on data
- ( ) To handle big data
- ( ) All the above

What does the term "smart" in "smart devices" typically refer to?

1 point

- ( ) Ability to handle large data
- (●) device's ability to connect to the internet

Which cloud service is widely used for IoT applications?

1 point

- (●) AWS
- ( ) Thingspeak
- ( ) Thingcloud

IoT Day 2- Assessment

What does XAMPP stand for?

- ● Cross-Platform Apache MySQL PHP Perl
- ○ Hexa decimal application
- ○ Independent platform app

Which component of XAMPP is responsible for serving web pages?

- ● Apache
- ○ AMP
- ○ XAM
- ○ HTML

In XAMPP, which folder should you place your web application files to access them via a web browser?

- ○ htdocs
- ○ /htdocs
- ● .htdocs

Which command is used to create a new database in MySQL?

- ○ CREATE DATABASE
- ● CREATE NEW DATABASE
- ○ CREATE DATABASE dbname
- ○ CREATE NEW DATABASE dbname

Which of the following is a valid data type in MySQL?

- ○ Text
- ○ Integer
- ○ Boolean
- ● String

What does the acronym SQL stand for?

- ● Structure Query Language
- ○ Sequence Query Language
- ○ Standard Query Language

In Tinkercad Circuits, which component is commonly used to simulate a push-button input for Arduino projects?

1 point

○ Option

◉ Push Button

○ Check box

○ Text Box

Google Forms

In MQTT, what term describes a message broker's storage of a client's subscription to a topic?

1 point

○ Presentation state

◉ Session State

○ Application state

Which protocol does MQTT typically use for its transport layer?

1 point

◉ TCP/IP

○ IP

○ OSI

Which feature in Tinkercad allows you to create and simulate circuits with Arduino?

1 point

○ create

○ open

◉ circuits

○ simulate

It is used to restrict the flow of current to electrical components in a circuit.

2 points

◉ Resistor

○ Inductor

○ Capacitor

○ All the above

An option of testing created virtual electronic circuits using virtual components

2 points

◉ simulation

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○ Testing

What rate can define the timing in the UART?

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IoT 5-6 - Assessment

A servo motor is not a rotary actuator

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2 points

- ○ 240
- ○ 140
- ◉ 340

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What type of network is typically used for short-range IoT communication?

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- ○ MAN
- ⦿ WAN
- ○ TIN

What is a primary function of a sensor in an IoT system?

- ○ To control the environmental parameter
- ○ To collect the data from the environment
- ⦿ To transfer the data from cloud to the controller
- ○ To monitor the cloud parameter

Which of the following is a popular IoT development platform?

- ○ Microprocessor 8085
- ○ Microcontroller 8051
- ○ PIC
- ⦿ Arduino

IoT Day 2- Assessment

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- ◉ CREATE NEW DATABASE
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IoT Day 3 & 4 Assessment

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◉ baud rate

IoT 5-6 - Assessment

Which type of sensor is commonly used to measure the level of a liquid in a tank?   2 points

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○ IR sensor

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○ To convert electrical quantity into physical quantity

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○ IR sensor

○ Ultrasonic senor

◉ Pressure sensor

A servo motor is not a rotary actuator   2 points

○ True

◉ False

The reflected wave is called the _____ wave.   2 points

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○ pulse

What does the L in LCD stand for?   2 points

◉ Light

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The LCD that comes with the Arduino is 16x2, what does the 2 mean?   2 points

○ 2 characters

○ 2 columns

◉ 2 lines

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

(Accredited by NBA, New Delhi)

In association with Quantanics Techserv Pvt Ltd, Madurai.

Value Added Course on "IoT and its Applications"

2024-25 ODD Semester (July 2024)

Assessment Summary

What does IoT stand for?

32 responses
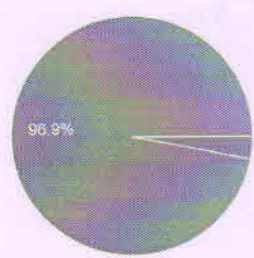
- Intranet of things
- Internet of things
- Interval of Time
- Intrusion of Time

96.9%

Which protocol is commonly used for IoT device communication?

32 responses

- MQTT
- I2C
- CAN
- ICT
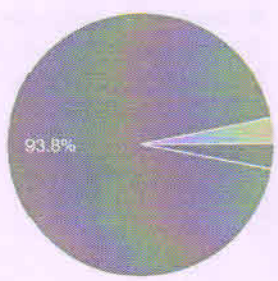
100%

What is a primary function of a sensor in an IoT system?

32 responses

- To control the environmental parameter
- To collect the data from the environment
- To transfer the data from cloud to the controller
- To monitor the cloud parameter

93.8%

Which of the following is an example of an IoT device?
32 responses
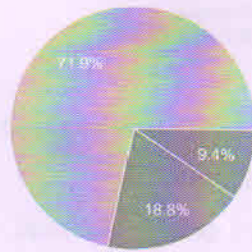
- Arduino
- IR Sensor
- Smart Refrigerator
- Refrigerator

71.9%
9.4%
18.8%

What type of network is typically used for short-range IoT communication?
32 responses

- PAN
- MAN
- WAN
- TIN

21.9%
56.3%
18.8%
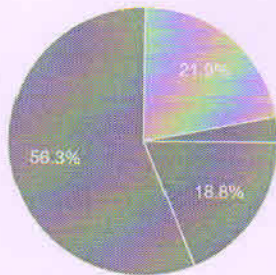
Which of the following is a popular IoT development platform?
32 responses

- Microprocessor 8085
- Microcontroller 8051
- PIC
- Arduino

40.6%
40.6%
18.8%
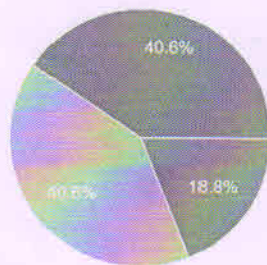
What does MQTT stand for?
32 responses
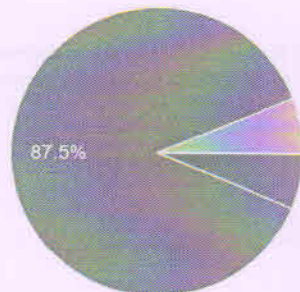
- Message Queuing Transport Telemetry
- Message Queuing Telemetry Transport
- Mutual Queuing Transport Telemetry
- Mutual Queuing Telemetry Transport

87.5%

What is the role of an actuator in an IoT system?
32 responses

- To monitor the environmental parameter
- To perform action based on data
- To handle big data
- All the above

96.9%

What does the term "smart" in "smart devices" typically refer to?
32 responses
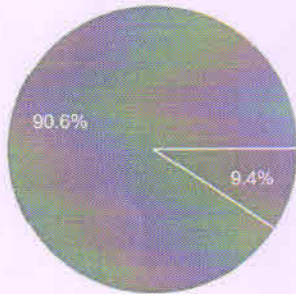
- Ability to handle large data
- device's ability to connect to the internet

90.6%

9.4%

Which cloud service is widely used for IoT applications?
32 responses
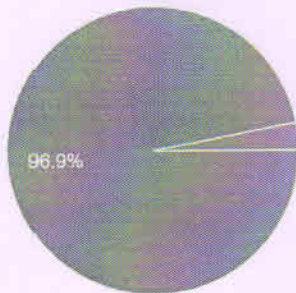
- AWS
- Thingspeak
- Thingcloud

96.9%

Staff In-Charge

Dr.C.Rajarani

HoD/EEE

Dr.D.Prince Winston

QUANTANICS TECHSERV PVT LTD

Department of Electrical and Electronics Engineering

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Value Added Course on "IoT and its Applications"
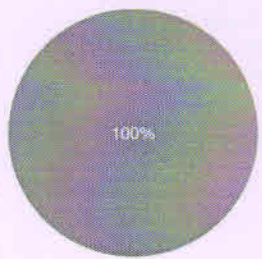
2024-25 ODD Semester (July 2024)

Class: III EEE (2022-2026) Batch

Regulation: R2021

S.No.	Register Number	Roll Number	Name of the student	Assessment (60)	Project (40)	Total (100)
1	920422105005	22UEE001	HARI KUMARAN S	50	33	83
2	920422105001	22UEE002	ABDUL RAHMAN FAISAL F	47	33	80
3	920422105025	22UEE003	VISHAAL S	49	33	82
4	920422105013	22UEE004	MANJULADEVI P	51	32	83
5	920422105008	22UEE005	KANKESHRAJ A	47	33	80
6	920422105014	22UEE007	MUKILAN M	52	33	87
7	920422105004	22UEE008	DEEPAVISHALI S	52	33	85
8	920422105012	22UEE009	MADHUMITHA M	51	34	85
9	920422105011	22UEE010	M LAVANYA	53	34	87
10	920422105016	22UEE011	PAUL EBINESH G	49	33	82
11	920422105022	22UEE012	V K SUDHARSAN	48	32	80
12	920422105010	22UEE013	KESAVAN M	52	35	87
13	920422105015	22UEE014	S PARTHA SARATHY	48	32	80
14	920422105019	22UEE015	RAM V	49	32	81
15	920422105024	22UEE016	VIGNESH S	48	32	80

S.No.	Register Number	Roll Number	Name of the student	Assessment (60)	Project (40)	Total (100)
16	920422105020	22UEE017	SANTHIYA J	48	33	81
17	920422105009	22UEE018	KARUPPASAMY S	48	32	80
18	920422105006	22UEE019	HARIBASKARAN A	49	32	81
19	920422105002	22UEE020	AMUTHAN N	47	34	81
20	920422105003	22UEE021	CHARUPRIYA G	48	33	81
21	920422105023	22UEE022	THAMEESH AHAMED M	48	32	80
22	920422105021	22UEE023	SETHU PATHI M	48	32	80
23	920422105007	22UEE024	HARISH KUMAR K	49	32	81
24	920422105017	22UEE025	POOJA K	48	33	81
25	920422105018	22UEE026	PREM G	52	35	87
26	920422105307	22UEE027	YOGAN DHANUSH M	50	33	83
27	920422105304	22UEE028	JOHN RAJ S	47	35	82
28	920422105306	22UEE029	MANI KANDAN K	51	32	83
29	920422105303	22UEE030	JIM ALLEN D J	48	32	80
30	920422105305	22UEE031	JOSHUA RAJ R	49	32	81
31	920422105301	22UEE032	HARIKUMARAN M	48	32	80
32	920422105302	22UEE033	HARISH KUMAR V	48	32	80

Staff In-Charge

Dr. A. Rajaraj

HOD/EEE

Dr. D. Prince Winsta.

Dean

(Academic Courses)

Dr. R. Jwenh Baby

Value Added Course on "IoT and its Applications"

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Regulation: R2021
Daily Assessment

S.No.	Register Number	Roll Number	Name of the student	Day 1 (10)	Day 2 (10)	Day 3 & 4 (20)	Day 5 ^ 6 (20)	Total (60)
1	920422105005	22UEE001	HARI KUMARAN S	7	8	18	17	50
2	920422105001	22UEE002	ABDUL RAHMAN FAISAL F	6	8	17	16	47
3	920422105025	22UEE003	VISHAAL S	7	8	17	17	49
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5	920422105008	22UEE005	KANKESHRAJ A	7	7	16	17	47
6	920422105014	22UEE007	MUKILAN M	8	8	18	18	52
7	920422105004	22UEE008	DEEPAVISHALI S	9	8	18	17	52
8	920422105012	22UEE009	MADHUMITHA M	8	8	18	17	51
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13	920422105015	22UEE014	S PARTHA SARATHY	8	7	17	16	48
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15	920422105024	22UEE016	VIGNESH S	8	8	16	16	48
16	920422105020	22UEE017	SANTHIYA J	7	7	17	17	48
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30	920422105305	22UEE031	JOSHUA RAJ R	8	8	16	17	49

QUANTANICS TECHSERV PVT LTD

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S.No.	Register Number	Roll Number	Name of the student	Day 1 (10)	Day 2 (10)	Day 3 & 4 (20)	Day 5 ^ 6 (20)	Total (60)
31	920422105301	22UEE032	HARIKUMARAN M	7	8	16	17	48
32	920422105302	22UEE033	HARISH KUMAR V	8	7	16	17	48

QUANTANICS TECHSERV PVT LTD
206, Vellaikannu Nagar, Theni Main Road,
Madurai - 625 016.
Ph : 86810 01680

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Project Presentation Marks

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1.	920422105001	22UEE002	ABDUL RAHMAN FAISAL F	8	8	9	8	33
2.	920422105002	22UEE020	AMUTHAN N	8	8	9	9	34
3.	920422105305	22UEE031	JOSHUA RAJ R	8	8	8	8	32
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16.	920422105014	22UEE007	MUKILAN M	8	8	8	9	33
17.	920422105015	22UEE014	S PARTHA SARATHY	8	8	8	8	32
18.	920422105009	22UEE018	KARUPPASAMY S	8	8	8	8	32
19.	920422105007	22UEE024	HARISH KUMAR K	8	8	8	8	32
20.	920422105307	22UEE027	YOGAN DHANUSH M	8	8	8	9	33
21.	920422105301	22UEE032	HARIKUMARAN M	8	8	8	8	32
22.	920422105010	22UEE013	KESAVAN M	8	9	9	9	35
23.	920422105018	22UEE026	PREM G	8	9	9	9	35
24.	920422105304	22UEE028	JOHN RAJ S	8	9	9	9	35
25.	920422105022	22UEE012	V K SUDHARSAN	8	8	8	8	32
26.	920422105025	22UEE003	VISHAAL S	8	8	8	9	33
27.	920422105019	22UEE015	RAM V	8	8	8	8	32
28.	920422105306	22UEE029	MANI KANDAN K	8	8	8	8	32
29.	920422105016	22UEE011	PAUL EBINESH G	8	8	9	8	33

S.No.	Register Number	Roll Number	Name of the student	Problem statement and Design (10)	Implementation (10)	Presentation (10)	Viva (10)	Total (40)
30.	920422105024	22UEE016	VIGNESH S	8	8	8	8	32
31.	920422105021	22UEE023	SETHU PATHI M	8	8	8	8	32
32.	920422105302	22UEE033	HARISH KUMAR V	8	8	8	8	32

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206, Vellaikannu Nagar, Theni Main Road,
Madurai - 625 016.
Ph : 86810 01680

Value Added Course on "IoT and its Applications" 08/07/2024 to 13/07/2024

* Required

* This form will record your name, please fill your name.

[   ]

1. About Technical Presentation *

   ○ Good

   ○ Very Good

   ○ Satisfactory

2. About the Lab Facility *

   ○ Good

   ○ Very Good

   ○ Satisfactory

3. About the Course Materials *

   ○ Good

   ○ Very Good

   ○ Satisfactory

4. Effectiveness of the Course *

   ○ Good

   ○ Very Good

   ○ Satisfactory

5. Any other points to improve the conduct of program like Value Added Course in future. *

[   ]

Review: Value Added Course on "IoT and its Applications" 08/07/2024 to 13/07/2024

Respondent

1　　　HARIBASKARAN.A

00:21
Time to complete

1. About Technical Presentation *　　　　　　　　　　　　　　　　　　Score　/ 0 pts

○ Good

◉ Very Good

○ Satisfactory

2. About the Lab Facility *　　　　　　　　　　　　　　　　　　　　Score　/ 0 pts

○ Good

◉ Very Good

○ Satisfactory

3. About the Course Materials *　　　　　　　　　　　　　　　　　Score　/ 0 pts

○ Good

◉ Very Good

○ Satisfactory

4. Effectiveness of the Course *　　　　　　　　　　　　　　　　　Score　/ 0 pts

○ Good

◉ Very Good

○ Satisfactory

5. Any other points to improve the conduct of program like Value Added Course in future. *　　Score　/ 0 pts

Good teaching

Review: Value Added Course on "IoT and its Applications" 08/07/2024 to 13/07/2024

Respondent

16   AMUTHAN.N

00:17

Time to complete

1. About Technical Presentation *   Score   / 0 pts

   ◉ Good

   ◯ Very Good

   ◯ Satisfactory

2. About the Lab Facility *   Score   / 0 pts

   ◉ Good

   ◯ Very Good

   ◯ Satisfactory

3. About the Course Materials *   Score   / 0 pts

   ◉ Good

   ◯ Very Good

   ◯ Satisfactory

4. Effectiveness of the Course *   Score   / 0 pts

   ◉ Good

   ◯ Very Good

   ◯ Satisfactory

5. Any other points to improve the conduct of program like Value Added Course in future. *   Score   / 0 pts

   Give seperate kit

Review: Value Added Course on "IoT and its Applications" 08/07/2024 to 13/07/2024

Respondent

24   KANKESHRAJ.A

01:43

Time to complete

1. About Technical Presentation *   Score   / 0 pts

   ○ Good

   ○ Very Good

   ◉ Satisfactory

2. About the Lab Facility *   Score   / 0 pts

   ○ Good

   ○ Very Good

   ◉ Satisfactory

3. About the Course Materials *   Score   / 0 pts

   ◉ Good

   ○ Very Good

   ○ Satisfactory

4. Effectiveness of the Course *   Score   / 0 pts

   ○ Good

   ○ Very Good

   ◉ Satisfactory

5. Any other points to improve the conduct of program like Value Added Course in future. *   Score   / 0 pts

   No

Value Added Course on "IoT and its Applications" 08/07/2024 to 13/07/2024

31 Responses   **00:52** Average time to complete   **Active** Status

1. About Technical Presentation (0 point)

● Good	8
● Very Good	20
● Satisfactory	3
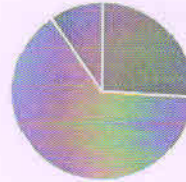
2. About the Lab Facility (0 point)

● Good	5
● Very Good	23
● Satisfactory	3
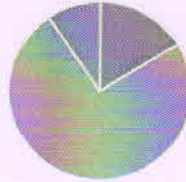
3. About the Course Materials (0 point)

● Good	8
● Very Good	20
● Satisfactory	3
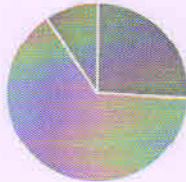
4. Effectiveness of the Course (0 point)

● Good	7
● Very Good	20
● Satisfactory	4
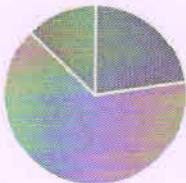
5. Any other points to improve the conduct of program like Value Added Course in future. (0 point)

Latest Responses

31

Responses

"We need more value added course for improving our knowledge "

"Need more basics of coding "

"To teach basics of the coding "

12 respondents (**39%**) answered **Good** for this question.

Gooy

knowledge coding briefly   VGood

no queries   **Best course**   V good   wonderful opportunity

value   helpful **Good**   **Extra days**   thing are awesome

seperate kit   basics   **curriculum**

Good teaching   useful

Brief explanation   **explanation about topics**

Dr. A. Bayand

D. Prince Winston

QUANTANICS TECHSERV PVT LTD

Department of Electrical and Electronics Engineering

(Accredited by NBA, New Delhi)

In association with Quantanics Techserv Pvt Ltd, Madurai.

Value Added Course on "IoT and its Applications"

2024-25 ODD Semester (July 2024)

Class: III EEE (2022-2026) Batch

Regulation: R2021

The IoT describes the network of physical devices embedded with sensors, software, and other technologies that collect and exchange data. These devices range from simple thermostats to complex industrial machinery, all connected to the internet via various protocols. This connectivity allows for data sharing, remote control, and automation, fundamentally transforming how we interact with our surroundings. Several key technologies underpin the functionality of IoT systems: Sensors gather data from the physical environment, while actuators translate digital signals into physical actions.

These protocols govern how devices communicate with each other and the cloud. Common protocols include wi-fi, Bluetooth and cellular networks. Cloud platforms provide storage, processing power, and analytics capabilities for the vast amounts of data generated by IoT devices. Data management tools collect, organize, analyze and visualize IoT data to extract valuable insights.

In this program students have learned about the basics of IoT, how to install the software required for cloud computing and to make data base in the webserver. Then the students have learned how to access the table from the webserver across the remote places. The students have made several projects with ESP32 like automated smoke detection system, automated door lock system through webserver, ultrasonic radar system, automated garage lock system.

Elements of this course

The course is comprised of the following elements:

- Basics of IoT
- Introduction to cloud computing and webserver

- IoT tasks using ESP32
- ESP32 interface with real time applications
- Assessment
- Programming assessment

Staff In-Charge

Dr. A. Rayan

HoD/EEE

Dr. A. Pan

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COURSE COMPLETION CERTIFICATE

Certificate No. : **EE001**

This is to certify that Mr. / ~~Ms.~~ ------- S. HARI KUMARAN ------------------ has attended the Value Added Course offered by Quantanics Techserv Pvt. Ltd., Madurai on **"IoT and its Applications"** from **08-07-2024 to 13-07-2024** in association with the Department of Electrical and Electronics Engineering, Kamaraj College of Engineering and Technology, Near Virudhunagar.

ASSESSMENT MARK: 83

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Certificate No. : *EE002*

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ASSESSMENT MARK: *80*

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Certificate No. : **EE003**

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ASSESSMENT MARK: 82

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ASSESSMENT MARK: 83

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ASSESSMENT MARK: --- 80 ---

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Certificate No. : **EE006**

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ASSESSMENT MARK: ----**87**----

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Certificate No. : **EE007**

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ASSESSMENT MARK: --**85**----

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Certificate No. : **EE008**

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ASSESSMENT MARK: --**85**--

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Certificate No. : **EE009**

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ASSESSMENT MARK: ---**87**---

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Certificate No. : **EE010**

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ASSESSMENT MARK: 82

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CEO

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Certificate No. : **EE 011**

This is to certify that Mr. / ~~Ms.~~ ----- V. K. SUDHARSAN ----------------- has attended the Value Added Course offered by Quantanics Techserv Pvt. Ltd., Madurai on **"IoT and its Applications"** from **08-07-2024 to 13-07-2024** in association with the Department of Electrical and Electronics Engineering, Kamaraj College of Engineering and Technology, Near Virudhunagar.

ASSESSMENT MARK: ----- 80 -----

Mr.A.KESAVAN

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Certificate No. : **EE012**

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ASSESSMENT MARK: --**87**--

Mr.A.KESAVAN

CEO

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Certificate No. : EE013

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ASSESSMENT MARK: ---- 80 ----

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Certificate No. : **EE014**

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ASSESSMENT MARK: 81

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CEO

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Certificate No. : *EE015*

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ASSESSMENT MARK: *80*

Mr.A.KESAVAN

CEO

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Certificate No. : **EE016**

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ASSESSMENT MARK: --81---

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CEO

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