

## SRI BHARATHI

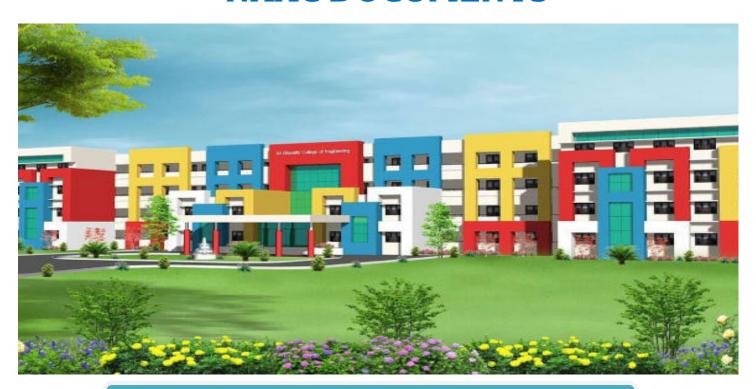
ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Kaikkurichi, Pudukkottai -622 303

www.sbec.edu.in

### **NAAC DOCUMENTS**



Quality Indicator Frame Work

Criterion – 2

Teaching-Learning and Evaluation

Submitted by

IQAC
Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Criteria 2

**Teaching-Learning and Evaluation** 

350

**Key Indicator- 2.3. Teaching- Learning Process (40)** 

## 2022-2023

## ELECTRICAL AND ELECTRONICS ENGINEERING

### PARTICIPATIVE LEARNING

Activity	Number of Students Attended	Page No.
Value Added Course (VAC)	36	3
Symposium, Seminar and Workshop	21	68
TOTAL STUDENTS ATTENDED	57	-

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Criteria 2

**Teaching-Learning and Evaluation** 

350

**Key Indicator- 2.3. Teaching- Learning Process (40)** 

2022-2023

## ELECTRICAL AND ELECTRONICS ENGINEERING

## PARTICIPATIVE LEARNING VALUE ADDED COURSE



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKOTTAI – 622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

#### **ACADEMIC YEAR 2022-2023 / ODD SEMESTER**

#### DEPARTMENT CIRCULAR

Date: 16 / 08 / 2022

A Value added course on "Internet of Things with Python" will be conducted by GALWIN Technology, Trichy in the college campus for all Second year from 22.08.2022 to 26.08.2022. Certificates will be issued to all the participants at the end of the Course.

S.No.	Name of the Course	Resource Person
1.	Internet of Things With Python	Resource Person: Mr.Kamalakannan Trainer GALWIN Technology

HOD/EEE
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN

KAIKKURICHI, PUDUKKOTTAI - 622 303.

Cc:

· Principal's Office

IQAC Coordinator

• Class In charges - II year of EEE

• II -year EEE Students

Notice Board

Dr. S.THILAGAVATH M.E., Ph.D.,

PRINCIPAL



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KAIKKURUCHI, PUDUKKOTTAI – 622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
VALUE ADDED COURSE

#### ACADEMIC YEAR ODD SEMESTER(2022-2023)

#### **INTERNET OF THINGS WITH PYTHON**

#### **SCHEDULE**

S.NO	TOPIC COVERED	DURATION (in hours)	DATE FN/AN
1 Understanding IoT fundamentals - IOT Architecture and protocols		3	22.08.2021
2	Various Platforms for IoT - Real time Examples of IoT	3	22.08.2021
3	Arduino Uno Architecture - Setup the IDE, Writing Arduino Software - Arduino Libraries	3	23.08.2021
4	Overview of IoT components and IoT Communication Technologies - Challenges in IOT	3	23.08.2021
5	Basics of Embedded C programming for Arduino	3	24.08.2021
6	Interfacing LED, push button and buzzer with Arduino	3	24.08.2021
7	Interfacing Arduino with LCD	3	25.08.2021
8	Overview of Sensors working - Analog and Digital Sensors	3	25.08.2021
9	Interfacing of Temperature, Humidity, Motion, Light and Gas Sensor with Arduino	3	26.08.2021
10	Interfacing of Actuators with Arduino	3	26.08.2021
	Total Periods :	30	

VAC COORDINATOR

Dr. S.THILAGAVATHI M.E., Ph.D.)

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkotiai Dt. HoD/EEE

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI, PUDUKKOTTAI - 622 303.



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING ACADEMIC YEAR ODD SEMESTER (2022-2023)

## STUDENT NAME LIST FOR VALUE ADDED COURSE INTERNET OF THINGS WITH PYTHON

S.NO	NAME	REG.NO	YEAR & SEMESTER	
1.	GOKULAPRAVEENA A	912621105001	II & III	
2.	SUMITHRA S	912621105004	II & III	

VAC COORDINATOR

HoD/EEE

HOD EEE

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

PUDLIKKOTTAL - 00 00

Dr. S.THILAGAVATHI M.E.,Ph.D.,



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) KAIKKURICHI, PUDUKKOTTAI-622 303 DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING **ACADEMIC YEAR ODD SEMESTER (2022-2023)** ATTENDANCE SHEET FOR VALUE ADDED COURSE **INTERNET OF THINGS WITH PYTHON** 

S.NO	REG. NO N	REG. NO	O NAME	YEAR/	22.0	8.22	23.0	8.22	24	.08.22	25.	08.22	26.	08.22	NO. OF CLASS	SIGN OF
			SEM	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	ATTENDED	STUDENT	
1	912621105001	GOKULAPRAVEENA A	II&III	1	1	1	1	1	1	1	1	1	1	10	A Gokul	
2	912621105004	SUMITHRA S	II&III	1	1	1	1	1	1	/	/	1	1	10	S. Sume	

VAC COORDINATOR

Dr. S.THILAGAVATHUM.E., Ph.D., PRINCIPAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.

HoD/EEE

HOD EEE

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI,

PUDUKKOTTAI - 622 303.

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#### **Report on Value Added Course**

Title:

INTERNET OF THINGS WITH PYTHON

Resource Person:

Mr.M.Kamalakann

Trainer

Galwin Technology

Date of conduct from:

22.08.2022

To:

26.08.2022

Duration:

30 Hours

Organized Department:

ELECTRICAL AND ELECTRONICS ENGINEERING

Participant Year:

Semester:

ODD

No. of Students Registered:

02

Venue:

Auditorium

#### Outcome of Value Added Course (VAC)

#### At the end of the VAC course the student can able to

- Explain fundamentals about IoT.
- Illustration of IoT Access technologies.
- Design methodology and different IoT hardware platforms.
- Identify with the application areas of IOT.
- Realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks.
- Describe the building blocks of Internet of Things and characteristics.

No. of students successfully completed the VAC course is 02 students based on the following assessment process.

#### **Assessment Process**

Students, who are securing more than 60% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted. Total Score = (0.5 \*Attendance in VAC out of 100 percentage + 0.5 \*Test mark in VAC out of 100 marks)

Coordinator

**COLLEGE FOR WOMEN** KAIKKURICHI.

PUDUKKOTTAI - 622 303.

Principal

PRINCIPAL

SRI BHARATHI ENGINEERING **COLLEGE FOR WOMEN** 

KAIKKURICHI - 622 303. PUDUKKOTTAI DISTRICT

Dr. S.THILAGAVATHI M.E., Ph.D.

PRINCIPAL



(Approved by AICTE | Affiliated to Anna University)

KAIKKURICHI, PUDUKKOTTAI-622303



### Certificate of completion

#### **VALUE ADDED PROGRAM**

This is to certify that Ms. SUMITHRA S of II EEE has successfully completed Value Added Course on "INTERNET OF THINGS WITH PYTHON" organized by the Department of Computer Science and Engineering in association with Galwin Technology from 22.08.2022 to 26.08.2022 during the academic year 2022-2023 [5 Days].

**Managing Director** Galwin Technology

D.14 ,

SBECW

PRINCIPAL SBECW

Dr. S.THILAGAVATHI M.E., Ph.D.,

HoD/CSE

PRINCIPAL SRI BHARATHI ENGINEERING

COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.



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KAIKKURICHI, PUDUKKOTTAI-622303



### Certificate of completion

#### **VALUE ADDED PROGRAM**

This is to certify that Ms. GOKULAPRAVEENA A of II EEE has successfully completed Value Added Course on "INTERNET OF THINGS WITH PYTHON" organized by the Department of Computer Science and Engineering in association with Galwin Technology from 22.08.2022 to 26.08.2022 during the academic year 2022-2023 [5 Days].

Managing Director Galwin Technology

D.14

HoD/CSE SBECW PRINCIPAL SBECW

Dr. S.THILAGAVATHI M.E., Ph.D.,

PRINCIPAL

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KAIKKURICHI, PUDUKKOTTAI-622 303

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR ODD SEMESTER (2022-2023)

Name of the Student:

Year/Sem:

**AU Register Number:** 

Value Added Course on "Internet of Things With Python"

MCO QUESTIONS	(25X1 = 25 Marks)
1. Which of the following is false about IoT device	es?
a) IoT devices use the internet for collecting and sharing data	c) IoT devices use wireless technology
b) IoT devices need microcontrollers	d) IoT devices are completely safe
<ul><li>2. Which of the following is not an IoT platform?</li><li>a) Amazon Web Services</li><li>b) Microsoft Azure</li></ul>	c) Salesforce d) Flipkart Dr. S.THILAGAVATHIL
<ul><li>3. Which of the following is not an application of I</li><li>a) BMP280</li><li>b) Smart home</li></ul>	PRINCIPAL
4. Which of the following is not a fundamental comp	ponent of an IoT system?
a) Sensors	c) User interface
b) Connectivity and data processing	d) Transformer
5. Which layer is used for wireless connection in Io7	Γ devices?
a) Application layer	c) Data link layer
b) Network layer	d) Transport layer
6. Which of the following is false about the IoT com	nponents?
<ul> <li>a) A light sensor (photoresistor) is an analog sensor</li> </ul>	c) A push button is a digital sensor
b) A microphone is a digital sensor	d) A keyboard is a digital sensor
7. Which of the following is used to capture data fr	om the physical world in IoT devices?
a) Sensors	c) Microprocessors
b) Actuators	d) Microcontrollers
8. Which of the following command is used to trig	ger the Amazon echo IOT device?
a) Hello	c) Alexa
b) Suri	d) Hey

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HOPE	DEPARTMENT OF ELECTRICAL AND ELI	
	9. Which of the following is false about the MANE	T IoT network?
	<ul><li>a) It is a self-configuring network</li><li>b) It has a low data rate</li></ul>	<ul><li>c) It doesn't have any encryption</li><li>d) Power is readily available for complex security</li></ul>
	10. Which of the following is not a sensor in IoT?	1 1
	a) BMP280 b) DHT11	c) Photoresistor d) LED
	11. Which of the following is not an actuator in Io	Dr. S.THILAGAVATHI M.E., Ph
	a) Stepper motor b) A fan	c) An LED d) Arduino  PRINCIPAL  SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.
	12. What is the use of PWM signals in IoT develo	pment boards?
	a) They are used by sensors to have analog input	c) They are used by actuators to have analog input
	b) They are used by sensors to have digital input	d) They are used by actuators to have digital input
	13. Which of the following is used to reprogram a	Bootloader in IoT devices?
	<ul><li>a) VHDL programming</li><li>b) IDE</li></ul>	c) ICSP d) MANET
	14. Which of the following is true about Arduino	IoT devices?
	<ul><li>a) They are open-source software</li><li>b) They can only read analog inputs</li></ul>	c) They have their own operating systems d) They don't have pre-programmed firmware
	15. How many number of elements in the Open Io	T Architecture?
	a) 3 elements	c) 8 elements
	b) 7 elements	d) 6 elements
	16. IoT-A stands for	
	a) Internet of Things Area	c) Internet of Things Address
	b) Industrial of things Architecture	d) Internet of Things Architecture
	17. Which of the following is not a feature of the l	Raspberry PI model B IoT device?
	a) It has 256 MB SDRAM	c) It has its own operating system
	b) It has a single USB connector	d) It has an Ethernet port
	18. Which of the following processor is used in the	e Raspberry PI 3 IoT device?
	a) Broadcom BCM2711	c) Broadcom BCM2838
	b) Broadcom BCM2837	d) Intel 8085

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#### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

<ul><li>19. Which library is used to access I2C</li><li>a) EEPROM</li><li>b) Wire</li></ul>	in Arduino IoT devices?
20. Which of the following is not related	to Arduino IDE IoT software?
a) Serial monitor	c) Upload
b) Verify	d) Terminate
21. Which of the following is a complete switches?	e line of home IoT devices that include smart
a) Belkin's WeMo	c) Awair
b) Cinder	d) Canary
22. IoT gateway must provide	
a) Protocol abstraction	c) Security with hardware
b) Data storage	d) Simple and fast installation
23. What IoT collects?	
a) Device data	c) Sensor data
b) Machine generated data	d) Human generated data
24. Which of the following protocol is u	sed to link all the devices in the IoT?
a) HTTP	c) Network
b) UDP	d) TCP/IP
25. Which service permits the changes to	the IoT services?
a) Update	c) Enable from suspension
b) Registered service status	d) Enable

Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL



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#### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

## ACADEMIC YEAR ODD SEMESTER (2022-2023) VALUE ADDED COURSE INTERNET OF THINGS WITH PYTHON

#### ANSWER KEY FOR MCQ

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

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KAIKKURICHI, PUDUKKOTTAI-622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
ACADEMIC YEAR ODD SEMESTER (2022-2023)

Name of the Student: S. SUMITHRA

Year/Sem: II / IV

AU Register Number: 912621105004

Value Added Course on "Internet of Things With Python"

	MCO QUESTIONS	(25X1 = 25 Marks)
1	. Which of the following is false about IoT device	es?
	a) IoT devices use the internet for collecting and sharing data	c) IoT devices use wireless technology
	b) IoT devices need microcontrollers	d) IoT devices are completely safe
2	. Which of the following is not an IoT platform?	
343	a) Amazon Web Services b) Microsoft Azure	c) Salesforce d) Flipkart Dr. S.THILAGAN PRIME, Ph.
3	. Which of the following is not an application of I BMP280	oT? SRIBHARATHI ENGINEERING COLLEGE FOR WOMEN
	b) Smart home	c) Smart city d) Self-driven cars  Kaikkurchi - 622 303, Pudukkottai Dt.
4.	Which of the following is not a fundamental comp	onent of an IoT system?
	a) Sensors	c) User interface
	b) Connectivity and data processing	d) Transformer
5.	Which layer is used for wireless connection in IoT	devices?
	a) Application layer	© Data link layer
	b) Network layer	d) Transport layer
6.	Which of the following is false about the IoT com	ponents?
	a) A light sensor (photoresistor) is an analog sensor	c) A push button is a digital sensor
	b) A microphone is a digital sensor	d) A keyboard is a digital sensor
7.	Which of the following is used to capture data from	
	a) Sensors	c) Microprocessors
	b) Actuators	d) Microcontrollers
8.	Which of the following command is used to trigg	ger the Amazon echo IOT device?
	a) Hello	Alexa
	b) Suri	d) Hev

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HOPE	KAIKKURICHI, PUDUKK DEPARTMENT OF ELECTRICAL AND E	
	DEFARTMENT OF ELECTRICAL AND E	LECTRONICS ENGINEERING
	9. Which of the following is false about the MAN	NET IoT network?
	<ul><li>a) It is a self-configuring network</li><li>b) It has a low data rate</li></ul>	c) It doesn't have any encryption d) Power is readily available for complex security
	10. Which of the following is not a sensor in IoT	?
	a) BMP280 b) DHT11	Photoresistor d) LED
	11. Which of the following is not an actuator in	IoT? Dr. S.THILAGAVATHI M.E.,Ph.
	<ul><li>a) Stepper motor</li><li>b) A fan</li></ul>	c) An LED  d) Arduino  SRI BHARATHI ENGINEERING  COLLEGE FOR WOMEN
	12. What is the use of PWM signals in IoT deve	
	a) They are used by sensors to have analog input	They are used by actuators to have analog input
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	13. Which of the following is used to reprogram	a Bootloader in IoT devices?
	a) VHDL programming	c) ICSP
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	14. Which of the following is true about Arduin	no IoT devices?
	a) They are open-source software	c) They have their own operating systems
	b) They can only read analog inputs	d) They don't have pre-programmed firmware
	15. How many number of elements in the Open	IoT Architecture?
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	16. IoT-A stands for	
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	18. Which of the following processor is used in	the Raspberry PI 3 IoT device?
	a) Broadcom BCM2711	c) Broadcom BCM2838
	b) Broadcom BCM2837	d) Intel 8085

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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Belkin's WeMo	c) Awair
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Dr. S.THILAGAVATHI ME., Ph.D.

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KAIKKURICHI, PUDUKKOTTAI-622 303

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR ODD SEMESTER (2022-2023)

Name of the Student: A Gold	a Praveng Year/Sem: [	1/12
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AU Register Number: 91262110500]

Value Added Course on "Internet of Things With Python"



MCO QUESTIONS	S(25X1 = 25  Marks)
1. Which of the following is false about IoT devi	ces?
a) IoT devices use the internet for collecting and sharing data	c) IoT devices use wireless technology
b) IoT devices need microcontrollers	d) foT devices are completely safe
2. Which of the following is not an IoT platform?	
a) Amazon Web Services	0) 9-16
b) Microsoft Azure	d) Flipkart PRINCIPAL
3. Which of the following is not an application of	ToT? SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
a) BMP280	c) Smart city  Kaikkurchi - 622 303, Pudukkottai Dt.
b) Smart home	d) Self-driven cars
4. Which of the following is not a fundamental con	apponent of an IoT system?
a) Sensors	c) User interface
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a) Hello	~c) Alexa
b) Suri	d) Hey

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KAIKKURICHI, PUDUKKOTTAI-622 303

DEPARTMENT OF ELECTRICAL AND ELI	ECTRONICS ENGINEERING
9. Which of the following is false about the MANE	T IoT network?
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10. Which of the following is not a sensor in IoT?	
. a) BMP280	c) Photoresistor
b) DHT11	Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL
11. Which of the following is not an actuator in Io	T? SRI BHARATHI ENGINEERING
<ul><li>a) Stepper motor</li><li>b) A fan</li></ul>	c) An LED Arduino  COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.
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a) It has 256 MB SDRAM b) It has a single USB connector	<ul><li>c) It has its own operating system</li><li>d) It has an Ethernet port</li></ul>
18. Which of the following processor is used in the a) Broadcom BCM2711 b) Broadcom BCM2837	e Raspberry PI 3 IoT device? c) Broadcom BCM2838 d) Intel 8085 THILAGAVATHI M.E., Ph.D., PRINCIPAL

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#### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL

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#### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

## ACADEMIC YEAR ODD SEMESTER (2022-2023) MARK SHEET FOR VALUE ADDED COURSE INTERNET OF THINGS WITH PYTHON

S.NO	NAME	NAME REG NO. YEAR/ SEM		1000	ACE 50%	VAC 50%	OVERALL MARK	
				No of Session Attended	MARKS	No of Correct Answer	MARKS	(A+B)
1	GOKULAPRAVEENA A	912621105001	II&IV	10	100	22	88	94
2	SUMITHRA S	912621105004	II&IV	10	100	23	-92	96

VAC COORDINATOR

HoD/EEE

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI, PUDUKKOTTAI - 622 303,

Dr. S.THILAGAVATHI M.E.S.Ph.D.,



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKOTTAI – 622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

#### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

#### DEPARTMENT CIRCULAR

Date: 22/07/2022

Value Added Course offered by the Department of EEE will be conducted in association with **SD PRO SOLUTIONS**, Trichy for III, IV year students on "**ESP8266 NODE MCU FOR IoT**" from 03.08.2022 to 09.08.2022 (except Sunday 07.08.2022). Certificates will be issued to the eligible participants at the end of the Course. The resource person details are shown in the following table.

#### RESOURSE PERSON DETAILS:

Mr.J.Mathes Kumar
Senior Embedded Developer
SD PRO SOLUTIONS
No. 64, 1st floor, Sri Krishna complex,
Opp to E.R Higher Sec
School, Chinthamani, Trichy-2.
sdprotrichy@gmail.com

Dr. S.THILAGAVATHI M.E., Ph.D.

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Kaikkurchi - 622 303, Pudukkottai Dt.

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HOO ELE

PUDUKKOTTAI - 622 303.

Cc:

- · Principal's Office
- IQAC Coordinator
- Class In charges III & IV-year of EEE
- III & IV-year EEE Students
- Notice Board



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#### **ACADEMIC YEAR 2022-2023/ODD SEMESTER**

#### VALUE ADDED COURSE

#### **ESP8266 NODE MCU FOR IOT**

#### **SCHEDULE**

S.NO	TOPICS	DURATION	DATE	
1.	Need for NODE MCU in embedded system boards and various available in market	3 HOURS	03.08.2022	
2.	Types of GPIO headers	3 HOURS	03.08.2022	
3.	Interfacing Node MCU to PC	3 HOURS	04.08.2022	
4.	Interface Node MCU with the IDE and types of inbuilt command and internal circuitry structure	3 HOURS	04.08.2022	
5.	Programming the LED, Real time Demonstration – LED blinking duration control	3 HOURS	05.08.2022	
6.	Circuit diagram - LED blinking (Breadboard based), and by Direct connection	3 HOURS	05.08.2022	
7.	Arduino IDE, Generating animated patterns on LCD	3 HOURS	06.08.2022	
8.	Interfacing LCD with Node MCU	3 HOURS	06.08.2022	
9.	Source code – Programming the LCD	3 HOURS	08.08.2022	
10.	Node MCU Web Server, Circuit Diagram – Controlling AC appliance	3HOURS	08.08.2022	
11.	Web Server code, Source code	3 HOURS	. 09.08.2022	
12.	Implementing web based remote control and its Hardware components	3HOURS	09.08.2022	
	TOTAL HOURS	36 H	OUR	

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PUDUKKOTTAI - 622 303.



# SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN (Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) KAIKKURUCHI, PUDUKOTTAI – 622 303 DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

#### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

#### STUDENT NAME LIST FOR VALUE ADDED COURSE

#### **ESP8266 NODE MCU FOR IOT**

S.NO	NAME	REG.NO	YEAR & SEMESTER
1	KAYALVIZHI K	912620105001	III &V
2	RAMADEVI S	912620105002	III &V
3	SRINANTHANA S	912620105003	III &V
4	KAVIYA R	912620105302	III &V
5	KOPPERUNDEVI S	912620105303	III &V
6	SRIBHARATHI S	912620105305	III &V
7	AASHIKA R	912619105001	IV &VII
8	ABINAYA S	912619105002	IV &VII
9	ABITHA P	912619105003	IV &VII
10	ARTHY N	912619105004	IV &VII
.11	DEEPIKA R	912619105005	IV &VII
12	NISHA S	912619105007	IV &VII
13	PAVITHRA M	912619105008	IV &VII
14	PRAGADEESHWARI A	912619105009	IV &VII
15	SIVARANJANI S	912619105010	IV &VII
16	RAGAVI R	912619105301	IV &VII

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KAIKKURICHI, PUDUKKOTTAI-622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

## ACADEMIC YEAR 2022-2023 / ODD SEMESTER ATTENDANCE SHEET FOR VALUE ADDED COURSE EPS8266 NODE MCU FOR IOT

S.NO	REG. NO	NAME	NAME		03.08.22		04.0	8.22	05.0	08.22	06.0	8.22	08.0	8.22	09.08.22		NO. OF	SIGN OF
5.110	REG. NO	NAME	YEAR/ SEM	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	CLASS ATTENDED	STUDENT	
1	912620105001	KAYALVIZHI K	III &V	1	1	/	1	1	/	1	1	1	1	1	1	12	de v	
2	912620105002	RAMADEVI S	III &V	1	/	1	1	1	1	1	1	1	1	/	1	12	Skayariz	
3	912620105003	SRINANTHANA S	III &V	1	a	1	1	/	1	1	1	/	1	1	1	- 1 - 1 - 1 - 1	Semon	
4	912620105302	KAVIYA R	III &V	1	1	/	/	1	a	1	1	/	/	1	1		R. Karige	
5	912620105303	KOPPERUNDEVI S	III &V	1	1	1	/	1	/	1	1	1	/	1	1	12	S. loof.	
6	912620105305	SRIBHARATHI S	III &V	1	1	1	/	/	1	1	1	1	/	1	1		S. SiBhan	
7	912619105001	AASHIKA R	IV &VII	1	/	1	/	1	1	1	/	1	1	1	1	12		
8	912619105002	ABINAYA S	IV &VII	a	a	1	1	/	/	1	/	1	/	1	a	09	R. Aash B. L. Bin	
9	912619105003	ABITHA P	IV &VII	1	1	1	/	/	/	/	/	/	/	/	/	12	P. Abith	

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10	912619105004	ARTHY N	IV &VII	1	/	/	1	1	/	/	1	1	1	/	/	12	12 dythy
11	912619105005	DEEPIKA R	IV &VII	1	1	1	1	1	/	1	1	1	1	1	/	12	O. Deep
12	912619105007	NISHA S	IV &VII	1	1	1	1	1	1	1	1	/	1	/	/	12	S. Nishae
13	912619105008	PAVITHRA M	IV &VII	/	1	1	1	1	/	1	/	1	1	1	/	12	M. Beecel
14	912619105009	PRAGADEESHWARI A	IV &VII	a	a	1	1.	1	1	1	1	1	1	/	1	10	A Pragadecho
15	912619105010	SIVARANJANI S	IV &VII	/	/	1	1	1	1	/	1	1	/	1	1	12	D. Suvariary
16	912619105301	RAGAVI R	IV &VII	/	1	1	1	a	a	/	/	1	1	1	1	10	R. Ragan

VAC COORDINATOR

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PUDUKKOTTAI - 622 303.

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#### Report on Value Added Course

Title: ESP8266 NODE MCU FOR IOT

Mr.J.Mathes Kumar, Senior Embedded Developer, Resource Person:

SD Pro Solutions, No. 64, 1st floor, Sri Krishna complex, Opp to E.R Higher Sec School, Chinthamani, Trichy-2.

Mail id: sdprotrichy@gmail.com

09.08.2022 Date of conduct from:

(except 03.08.2022 To: Sunday

Duration:

36 Hours

Organized Department:

ELECTRICAL AND ELECTRONICS ENGINEERING

07.08.2022)

Participant Year: 3/4 Semester:

ODD

No. of Students Registered:

16

Venue:

**Tutorial Hall:42,SBECW** 

#### Outcome of Value Added Course (VAC)

At the end of the Course, Students can able to

- Explain about the need for NODE MCU in embedded system boards and types of GPIO headers.
- Describe about the interfacing Node MCU to PC and with the IDE and types of inbuilt command and internal circuitry structure.
- Obtain the insight about Programming the LED, Real time Demonstration LED blinking duration control.
- Comprehend about Arduino IDE, Interfacing LCD with Node MCU.
- Demonstrate about Node MCU Web Server, Controlling AC appliance.
- Illustrate about implementing web based remote control and its Hardware components.

No. of students successfully completed the VAC course is 16 students based on the following assessment process.

#### **Assessment Process**

- Students, who are securing more than 60% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted.
- Total Score = (0.5 \*Attendance in VAC out of 100 percentage + 0.5 \*Test mark in VAC out of 100 marks)

VAC Coordinator

DLLEGE FOR WOMEN

KAIKKURICH! PUDUKKOTTAI - 622 303. Principal

COLLEGE FOR WOMEN

KAIKKURICHI - 622 303. **PUDUKKOTTAI DISTRICT** 

Dr. S.THILAGAVATHI M.E. Ph.D.



No. 64, 1st floor,Sri Krishna complex, Opp to E.R Higher Sec School,Chinthamani,Trichy-2. Email id: <a href="mailto:sdprotrichy@gmail.com">sdprotrichy@gmail.com</a>



## **CERTIFICATE OF PARTICIPATION**

This is to certify that Ms RAMADEVIS, Reg no: 912620105002, III year, EEE department has successfully completed the Value added Course on "ESP8266 NODE MCU for IoT" conducted at Sri Bharathi Engineering College for Women, Pudukkottai in association with SD PRO SOLUTIONS PVT LTD, Trichy from 03.08.2022 to 09.08.2022.

MR.J.MATHES KUMAR SENIOR EMBEDDED DEVELOPER

Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING

COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt. PRINCIPAL

**SBECW** 



No. 64, 1st floor,Sri Krishna complex, Opp to E.R Higher Sec School,Chinthamani,Trichy-2. Email id: <a href="mailto:sdprotrichy@gmail.com">sdprotrichy@gmail.com</a>



## **CERTIFICATE OF PARTICIPATION**

This is to certify that Ms SRINANTHANA S, Reg no: 912620105003, III year, EEE department has successfully completed the Value added Course on "ESP8266 NODE MCU for IoT" conducted at Sri Bharathi Engineering College for Women, Pudukkottai in association with SD PRO SOLUTIONS PVT LTD, Trichy from 03.08.2022 to 09.08.2022.

MR.J.MATHES KUMAR

SENIOR EMBEDDED DEVELOPER

**PRINCIPAL** 

**SBECW** 

Dr. S.THILAGAVATHI M.E., Ph.D.

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## **CERTIFICATE OF PARTICIPATION**

This is to certify that Ms AASHIKAR, Reg no: 912619105001, IV year, EEE department has successfully completed the Value added Course on "ESP8266 NODE MCU for IoT" conducted at Sri Bharathi Engineering College for Women, Pudukkottai in association with SD PRO SOLUTIONS PVT LTD, Trichy from 03.08.2022 to 09.08.2022.

MR.J.MATHES KUMAR

SENIOR EMBEDDED DEVELOPER

PRINCIPAL SBECW

Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
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Kaikkurchi - 622 303, Pudukkottai Dt.



a) 28A

b)12mA

c)100mA

d)1A

## SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN (Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai- 622 303. DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

#### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

	VALUE ADDED COURSE
	ESP8266 NODE MCU FOR IOT
Name of	student: Year/Sem:
AU Reg.N	No:
MULTIP	LE CHOICE QUESTIONS (25 X1 =25 MARKS)
1.	. What is ESP8266?
	a) A Wi-Fi based Micro controller b) Relay module
	c) Pressure sensor d) Bluetooth module
2.	What among them is an application of NodeMCU?
	a) Creates a Library for Lua Script b) Tells the time
	c) Home automation d) All of these
3.	What is the use of the ESP8266 Wifi Module?
	a) Monitors motion b) Evaluates air pressure Dr. S.THILAGAVATHI M.E., Ph.D. PRINCIPAL
	c) Network provider d) Switches circuits SRI BHARATHI ENGINEERING
	COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.
4.	How many pins are present in the ESP8266 Wifi Module?
	a) 12 b) 10 c) 8 d) 50
5.	What is the use of TX pin?
	a) Upload b) Download c) Ground d) Power input
6.	What will happen if we supply a voltage of 250kV to the ESP8266 Wifi Module?
	a) Damages caused
	b) Module will shut down
	c) Module will not respond for the time the voltage is applied
	d) Module will function normally
7.	What is the maximum source current that is required to operate the ESP8266 Wifi
	module?



c) RST and EN

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

8.	What is the op	otimum supp	ly current that is re-	quired to ope	rate the ESP8266 Wifi
	a) 28A	b)13mA	c) 100mA	d) 1A	
9.	What kind of	device is the	ESP8266 Wifi mod	dule?	
	a) Passive Ser	isor	b) Active Senso	or	*
	c) Networking	g Devices	d) Swiching De	evice	
10	. What is type of	of waves that	the ESP8266 Wifi	module dete	cte?
	a) Infra red	, waves mai	b) Radio signal	module deter	cts:
	c) Dc signal		d) Hybrid signal		
11	What mode do	nes the FSDQ	266 Wifi modulo si	witch to whom	n fed the sequence 11 to its
11.	GPIO-o and C	PIO-2 Pins?		witch to wher	if led the sequence 11 to its
	a) URAT mod		b) Sleep mode		
	c) Active mod	e	d) Flash mode		
12.	What mode do			witch to wher	n fed the sequence 01 to its
	a) URAT mod	e	b) Sleep mode		
	c) Active mod	e	d) Flash mode		
13.	Which are the	following IF	DEs are suitable for	NodeMCIIn	arogramming?
	a) Node MCU		b) Lua tool	rodelvic o p	orogramming:
	c) Arduino ID		d) None of Thes	se	$<$ $\lambda$ $\sim$
14.	Baud Rate of 1	NodeMCU is			Dr. S.THILAGAVATHI M.E.,Ph.D.
		) 115200	c) 1115200	d) 8421	PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
15.	The same of the same		nnels are present in	ESP8266?	Kaikkurchi - 622 303, Pudukkottai Dt.
	a) 6 b) 8	c) 10	d) 4		
16.	Which pin is u a) Vin b) Vc			ler board thro	ough external power?
17.	What are the ty	wo buttons p	resent in the ESP82	66 board?	
	a) Vcc and GN	ND	b) 3V3 and GND		

d) FLASH and RST



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18.	3. Which among the following IDE's can't be used for ESP8266?  a) Arduino IDE  b) Lua IDE										
	c) ESPlorer d) Code Blocks										
19.	How many GND (ground) pins are present in the NodeMCU ESP8266? a) 1 b) 2 c) 3 d) 4										
20.	What is the resolution of the ADC present in ESP8266?										
	a) 8-bit b) 10-bit c) 12-bit d) 16-bit										
21.	What are some of the external features integrated with NodeMCU?  a) Hall effect sensor b) Temperature sensor c) Touch sensor d) ADC										
22.	22. What is the voltage at which the ESP8266 works? a) 5V b) 4.8V c) 3.3V d) 12V										
23.	What does GPIO stand for?  a) General Purpose Input Output c) General Periodic Input Output d) General Purpose Input Output d) General Purpose Input Only										
	How many GPIO pins are present in Node MCU (ESP8266)?  a) 14 b) 12 c) 15 d) 17										
25.	What does ADC stand for in Electronics?										
	a) Analog Digital Communication b) Analog to Digital Converter c) Apparent Digital Communication d) None of the above										

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#### **ACADEMIC YEAR 2022-2023 / ODD SEMESTER**

#### <u>VALUE ADDED COURSE</u> <u>ESP8266 NODE MCU FOR IOT.</u>

#### ANSWER KEY FOR MCQ

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

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#### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

#### VALUE ADDED COURSE

#### **ESP8266 NODE MCU FOR IOT**

Name of student: K. Kayal vizhi	Year/Sem: 111 /V
AU Reg.No: 9126201 05001	

d) All of these

b) Evaluates air pressure

d) Switches circuits

#### MULTIPLE CHOICE QUESTIONS (25 X1 =25 MARKS)

1.	What is ESP8266?	
	a) A Wi-Fi based Micro controller	b) Relay module
	c) Pressure sensor	d) Bluetooth module
2.	What among them is an application o	f NodeMCU?
	a) Creates a Library for Lua Script	b) Tells the time

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4. How many pins are present in the ESP8266 Wifi Module?
a) 12 b) 10 c) 8 d) 50

3. What is the use of the ESP8266 Wifi Module?

5. What is the use of TX pin?

(a) Upload b) Download c) Ground d) Power input

6. What will happen if we supply a voltage of 250kV to the ESP8266 Wifi Module? a) Damages caused

b) Module will shut down

c) Home automation

c) Network provider

a) Monitors motion

- c) Module will not respond for the time the voltage is applied
- d) Module will function normally

7.	What is	s the	maximum	source	current	that	is	require	d to	operate	the	ESP8266	Wifi
	module	?			,				. 1	1			
	a) 28A		b)12mA	· · · · · · · · · · · · · · · · · · ·	)100mA		d)	1A	X				



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DEPART	MENT OF EL	ECTRICAL AN	ID ELECT	FRONICS EN	GINEERIN	1G
8. What is the o	optimum supply	y current that is re	equired to	operate the ESI	P8266 Wifi	
	L\12 A	100 1	15.1.4			
a) 28A	b)13mA	(c) 100mA	d) 1A			
9. What kind o	f device is the I	ESP8266 Wifi mo	odule?			
a) Passive Se		b) Active Sens				
c) Networkin	ng Devices	The state of the s				
10. What is type	of waves that t	he ESP8266 Wif	i module d	etects?		
a) Infra red		b) Radio signal				
c) Dc signal		d) Hybrid signa	1			
	does the ESP82 GPIO-2 Pins?	66 Wifi module s	switch to v	when fed the sec	quence 11 to	its
		L) CI				
a) URAT mo		b) Sleep mode				
c) Active mo	ode ,	d)-Flash mode				
12. What mode of	does the ESP82	66 Wifi module s	switch to w	hen fed the sec	quence 01 to	its
	GPIO-2 Pins?					
a) URAT mo	de	b) Sleep mode				
c) Active mo	de	d) Flash mode				
13. Which are th			r NodeMC	U programmin	g?	
a) Node MCI		b) Lua tool				
c) Arduino II	DE	d) None of The	ese			
14 David Data at	2NI- J-MCU !					
14. Baud Rate of	NodeWICU IS		1) 0.401			
a) 9600	b) 115200	c) 1115200	d) 8421			
15. How many P	WM pins/chan	nels are present i	n ESP8266	9		
	8 c) 10	d) 4	. 201 0200	•		
-, - 0) (	5) 10	40				
16. Which pin is	used to power a	any Micro contro	ller board	through externs	al power?	
	cc c) GND d			O DESTRUCTION	1	N
					\ /	

17. What are the two buttons present in the ESP8266 board? a) Vcc and GND b) 3Y3 and GND

c) RST and EN

d) FLASH and RST

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<ul><li>18. Which among the following IDE's can't be used for ESP8266?</li><li>a) Arduino IDE</li><li>b) Lua IDE</li></ul>	
c) ESPlorer d) Code Blocks	
19. How many GND (ground) pins are present in the NodeMCU ESP8266?  a) 1 b) 2 c) 3 d) 4	
20. What is the resolution of the ADC present in ESP8266?	
a) 8-bit b) 10-bit c) 12-bit d) 16-bit	
21. What are some of the external features integrated with NodeMCU?  a) Hall effect sensor b) Temperature sensor c) Touch sensor d) ADC	
22. What is the voltage at which the ESP8266 works? a) 5V b) 4.8V 3.3V d) 12V	
23. What does GPIO stand for?  a) General Purpose Input Output c) General Periodic Input Output d) General Purpose Input Only	
24. How many GPIO pins are present in Node MCU (ESP8266)? a) 14 b) 12 c) 15 d) 17	
25. What does ADC stand for in Electronics?	
a) Analog Digital Communication c) Apparent Digital Communication d) None of the above	05000

Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING

COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.



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### Kaikkurichi, Pudukkottai- 622 303. DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

#### VALUE ADDED COURSE

#### **ESP8266 NODE MCU FOR IOT**

Name of student:	N. ARTHY
------------------	----------

912619105004 AU Reg.No:

### MULTIPLE CHOICE QUESTIONS (25 X1 = 25 MARKS)

1. What is ESP8266?

a) A Wi-Fi based Micro controller

b) Relay module

c) Pressure sensor

d) Bluetooth module

2. What among them is an application of NodeMCU?

Creates a Library for Lua Script

b) Tells the time

c) Home automation

d) All of these

3. What is the use of the ESP8266 Wifi Module?

a) Monitors motion

b) Evaluates air pressure

c) Network provider

d) Switches circuits

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PRINCIPAL SRI BHARATHI ENGINEERING

Year/Sem: JV / VJI

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4. How many pins are present in the ESP8266 Wifi Module?

a) 12 b) 10 c) 8

d) 50

5. What is the use of TX pin?

a) Upload

b) Download

c) Ground

d) Power input

6. What will happen if we supply a voltage of 250kV to the ESP8266 Wifi Module? a) Damages caused

b) Module will shut down

c) Module will not respond for the time the voltage is applied

d) Module will function normally

7. What is the maximum source current that is required to operate the ESP8266 Wifi module?

a) 28A

b)12mA

200mA

d)1A



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	DEPAR	IMENT OF E	LECTRICAL AN	D ELECTRO	NICS ENGINEERING
8.	What is the	e optimum supp	ly current that is re	quired to opera	ate the ESP8266 Wifi
	Module?				/
	a) 28A	<b>♦</b> )13mA	c) 100mA	d) 1A	<b>\</b>
9.	What kind	of device is the	ESP8266 Wifi mo	dule?	
	a) Passive	Sensor	b) Active Senso	or	
		king Devices			26
10	. What is typ	oe of waves that	the ESP8266 Wifi	module detect	S?Dr. S.THILAGAVATHI M.E.,Ph.
	a) Infra red	1	♠ Radio signal		SPI PINCIPAL PIN.
	c) De signa	al	d) Hybrid signal		SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.
11				witch to when	fed the sequence 11 to its
		d GPIO-2 Pins?			
	a) URAT n		b) Sleep mode		
	c) Active m	node	d) Flash mode		
12	GPIO-o and	d GPIO-2 Pins?		witch to when	fed the sequence 01 to its
	a) URAT n	node	b) Sleep mode		
	c) Active m	node	d) Flash mode		
13	Which are t	the following IF	DEs are suitable for	NodoMCII	o oromonia o O
		CU WebIDE	b) Lua tool	Nodelvico pi	ogramming:
	C Arduino		d) None of The	se	
			a) Hone of The		
14.	Baud Rate	of NodeMCU is			
	a) 9600	b) 115200	c) 1115200	d) 8421	<b>X</b>
15.	How many	PWM pins/char	nnels are present in	FSP82662	
		) 8 c) 10	d) 4	251 0200.	
16.		is used to power Vcc c) GND		ler board throu	igh external power?
17.	What are th	e two buttons n	resent in the ESP82	266 hoard?	
	a) Vcc and		b) 3 \( \text{y} \) and GND	oo ooulu:	

d) FLASH and RST

c) RST and EN



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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

18.	a) Arduino IDE b) Lua IDE c) ESPlorer c) Code Blocks
19.	How many GND (ground) pins are present in the NodeMCU ESP8266?  a) 1 b) 2 c) 3 d) 4
20.	What is the resolution of the ADC present in ESP8266?
	a) 8-bit b) 10-bit c) 12-bit d) 16-bit
21.	What are some of the external features integrated with NodeMCU?  a) Hall effect sensor b) Temperature sensor c) Touch sensor d) ADC
22.	What is the voltage at which the ESP8266 works? a) 5V b) 4.8V \$\cdot 3.3V\$ d) 12V
23.	What does GPIO stand for?  a) General Purpose Input Output c) General Periodic Input Output d) General Purpose Input Output d) General Purpose Input Only
24.	How many GPIO pins are present in Node MCU (ESP8266)? a) 14 b) 12 c) 15 d) 17
25.	What does ADC stand for in Electronics?
	a) Analog Digital Communication c) Apparent Digital Communication d) None of the above

Dr. S.THILAGAVATH M.E., Ph.D., PRINCIPAL

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

#### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

#### VALUE ADDED COURSE

#### **ESP8266 NODE MCU FOR IOT**

IV.	10
1	Y

AU Reg.No: 912619105007

### **MULTIPLE CHOICE QUESTIONS (25 X1 = 25 MARKS)**

- 1. What is ESP8266?
  - A Wi-Fi based Micro controller
- b) Relay module
- c) Pressure sensor d) Bluetooth module
- 2. What among them is an application of NodeMCU?
  - a) Creates a Library for Lua Script

b) Tells the time

c) Home automation

- d) All of these
- 3. What is the use of the ESP8266 Wifi Module?
  - a) Monitors motion
- b) Evaluates air pressure
- Network provider
- d) Switches circuits

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- 4. How many pins are present in the ESP8266 Wifi Module?
  - a) 12
- b) 10
- c)8
- d) 50
- 5. What is the use of TX pin?
  - a) Upload
- b) Download
- c) Ground
- d) Power input
- 6. What will happen if we supply a voltage of 250kV to the ESP8266 Wifi Module?
  - a) Damages caused
  - b) Module will shut down
  - c) Module will not respond for the time the voltage is applied
  - d) Module will function normally
- 7. What is the maximum source current that is required to operate the ESP8266 Wifi module?
  - a) 28A
- 12mA
- c)100mA
- d)1A



c) RST and EN

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8. What is the optimum supp	ly current that is requi	ired to operate the ESP8266 Wifi
a) 28A b)13mA	c) 100mA	d) 1A
9. What kind of device is the		le?
	b) Active Sensor	
Networking Devices	d) Swiching Devic	ce
10. What is type of waves that	t the ESP8266 Wifi mo	odule detects?
	b) Radio signal	
c) Dc signal	d) Hybrid signal	
11. What mode does the ESP8 GPIO-o and GPIO-2 Pins		tch to when fed the sequence 11 to its
a) URAT mode		. /
c) Active mode	b) Sleep mode d) Flash mode	*
GPIO-o and GPIO-2 Pins? a) URAT mode c) Active mode		tch to when fed the sequence 01 to its
13. Which are the following II	DEs are suitable for No	odeMCU programming?
	b) Lua tool	
C) Arduino IDE	d) None of These	
14. Baud Rate of NodeMCU i	s	$\bigcirc$ 1 $\bigcirc$ 1
a) 9600 b) 115200	c) 1115200 d)	8421
15. How many PWM pins/cha a) 6 b) 8 c) 10	nnels are present in ES d) 4	SP8266?  SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.
16. Which pin is used to powe a) Vin by Vcc c) GND		board through external power?
17. What are the two buttons p	present in the ESP8266	6 board?
a) Vcc and GND	b) 3V3 and GND	

FLASH and RST



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18. Which among the following IDE's can't be used for ESP8266?

	a) Arduino IDE b) Lua IDE
	c) ESPlorer d) Code Blocks
19.	How many GND (ground) pins are present in the NodeMCU ESP8266?
	a) 1 b) 2 c) 3 d) 4
20.	What is the resolution of the ADC present in ESP8266?
	a) 8-bit b) 10-bit c) 12-bit d) 16-bit
21	What are some of the external features integrated with NodeMCU?
	a) Hall effect sensor b) Temperature sensor
	c) Touch sensor d) ADC
	What is the voltage at which the ESP8266 works?
	a) 5V b) 4.8V (3.3V d) 12V
23.	What does GPIO stand for?
,	General Purpose Input Output b) Generic Purpose Input Output
	c) General Periodic Input Output d) General Purpose Input Only
24.	How many GPIO pins are present in Node MCU (ESP8266)?
	a) 14 b) 12 c) 15 d) 17
25.	What does ADC stand for in Electronics?
	a) Analog Digital Communication b) Analog to Digital Converter
	c) Apparent Digital Communication d) None of the above

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### ACADEMIC YEAR 2022-2023 / ODD SEMESTER

### MARK SHEET FOR VALUE ADDED COURSE **ESP8266 NODE MCU FOR IOT**

2.110	PPG 116		YEAR/	ATTENDA (A		STATE OF THE STATE	-MCQ %(B)	OVERALL
S.NO	REG. NO	NAME	SEM	No of Session Attended	MARKS	No of Correct Answer	MARKS	MARK (A+B)
1	912620105001	KAYALVIZHI K	III &V	12	100	23	92	96
2	912620105002	RAMADEVI S	III &V	12	100	24	96	98
3	912620105003	SRINANTHANA S	III &V	11	92	20	80	86
4	912620105302	KAVIYA R	III &V	11	92	23	92	92
5	912620105303	KOPPERUNDEVI S	III &V	12	100	21	84	92
6	912620105305	SRIBHARATHI S	III &V	12	100	24	96	98
7	912619105001	AASHIKA R	IV &VII	12	100	22	88	94
8	912619105002	ABINAYA S	IV &VII	. 9	75	21	84	80
9	912619105003	ABITHA P	IV &VII	12	100	24	96	98
10	912619105004	ARTHY N	IV &VII	12	100	20	80	90
11	912619105005	DEEPIKA R	IV &VII	12 .	100	24	96	98
12	912619105007	NISHA S	IV &VII	12	100	21	84	92
13	912619105008	PAVITHRA M	IV &VII	12	100	23	92	96
14	912619105009	PRAGADEESHWARI A	IV &VII	10	83	24	96	90
15	912619105010	SIVARANJANI S	IV &VII	12	100	20	. 80	90
16	912619105301	RAGAVI R	IV &VII	10	83	23	92	88

VAC CÓORDINATOR

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### **ACADEMIC YEAR 2022-2023 / EVEN SEMESTER**

### DEPARTMENT CIRCULAR

This is to inform that certificate course offered by the Department of Electrical and Electronics Engineering will be conducted for all Second, Third & Final year on "REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS" from 30.01.2023 to 03.02.2023. Certificates will be issued to the eligible participants at the end of the Course. The resource person details are shown in the following table.

Sl.No.	Name of the Course	Course Coordinator
1.	Real Time Application of Arduino Uno Boards	Mr. T. PARTHIBAN Assistant professor, EEE department, SBECW

HOD/EEEL
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.

Date: 23/01/2023

Cc:

- · Principal's Office
- IQAC Coordinator
- Class In charges II, III & IV-year of EEE
- II, III & IV-year EEE Students
- Notice Board

Dr. S.THILAGAVATHI M.E., Ph.D.,

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkotta: Dt.



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### **CERTIFICATE COURSE**

## REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS

### **SCHEDULE**

SI .NO	TOPICS	DURATION (in hours)	DATE	
1.	Course Introduction	3	30.01.2023	
2.	Understanding Arduino Syntax	3	30.01.2023	
3.	Serial Port Communication	3	31.01.2023	
4.	Pulse Width Modulation using analogWrite ()	3	31.01.2023	
5.	Comparison Operators and Condition	3	01.02.2023 01.02.2023 02.02.2023	
6.	Using a Keyboard for Data Collection	3		
7.	State Change Detection and the Modulo Operator	3		
8.	De-bouncing a Button	3	02.02.2023	
9.	Analog I/O and Serial Communications	3	03.02.2023 03.02.2023	
10.	Smoothing Data	3		
	TOTAL HOURS	30 H	OURS	

G. 75h COURSE COORDINATOR

> Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL

SRI BHARATHI ENGINEERING **COLLEGE FOR WOMEN** Kaikkurchi - 622 303, Pudukkottai Dt.

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PUDUKKOTTAI - 622 303,



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### ACADEMIC YEAR 2022-2023 / EVEN SEMESTER

### STUDENT NAME LIST FOR CERTIFICATE COURSE

### REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS

S.NO	NAME	REG.NO	YEAR & SEMESTER
1.	GOKULAPRAVEENA A	912621105001	II&IV
2.	SUMITHRA S	912621105004	II&IV
3.	KAYALVIZHI K	912620105001	III &VI
4.	RAMADEVI S	912620105002	III &VI
5.	SRINANTHANA S	912620105003	III &VI
6.	KAVIYA R	912620105302	III &VI
7.	KOPPERUNDEVI S	912620105303	III &VI
8.	SRIBHARATHI S	912620105305	III &VI
9.	AASHIKA R	912619105001	IV &VIII
10.	ABINAYA S	912619105002	IV &VIII
11.	ABITHA P	912619105003	IV &VIII
12.	ARTHY N	912619105004	IV &VIII
13.	DEEPIKA R	912619105005	IV &VIII
14.	NISHA S	912619105007	IV &VIII
15.	PAVITHRA M	912619105008	IV &VIII
16.	PRAGADEESHWARI A	912619105009	IV &VIII
17.	SIVARANJANI S	912619105010	IV &VIII
18.	RAGAVI R	912619105301	IV &VIII

COURSE COORDINATOR

SRI BRARATHI ENGINEERING Dr. S.THILAGAVATHIM.E., Ph.D.

**COLLEGE FOR WOMEN** KAIKKURICHI,

PUDUKKOTTAI - 622 303.

COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.

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KAIKKURICHI, PUDUKKOTTAI-622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### ACADEMIC YEAR 2022-2023 / EVEN SEMESTER

# ATTENDANCE SHEET FOR CERTIFICATE COURSE REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS

S.NO	REG. NO	NAME	YEAR/	30.01	1.2023	31.0	1.2023	01.02	2.2023	02.0	2.2023	03.02	.2023	NO. OF	SIGN OF
			SEM	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	- CLASS ATTENDED	STUDENT
_1	912621105001	GOKULAPRAVEENA A	II&IV	1	1	1	/	1	1	1	1	1	1	10	A. brofent.
2	912621105004	SUMITHRA S	II&IV	1	/	1	1	1	1	/	1	1	1	10	s sum.
3	912620105001	KAYALVIZHI K	III &VI	/	1	/	a	/	/	1	1	1	/	09	Khayanz
4	912620105002	RAMADEVI S	III &VI	1	/	/	/	1	/	/	1	/	/	10	Sanj.
5	912620105003	SRINANTHANA S	III &VI	/	1	/	1	/	/	1	1	1	1	10	SSNOgy.
6	912620105302	KAVIYA R	III &VI	1	/	1	/	1	1	1	1	1	1		R. Hauriga
7	912620105303	KOPPERUNDEVI S	III &VI	1	/	/	1	1	/	1	,	1	/	10	S.kot.
8	912620105305	SRIBHARATHI S	III &VI	/	/	/	/	/	1	/	1	1	1		Soi Brog.

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Kaikkurchi - 622 303, Pudukkottai Dt.

9	912619105001	AASHIKA R	IV &VIII	1	1	/	1	1	1	1	1	1	1	10	R. Aashika
10	912619105002	ABINAYA S	IV &VIII	1	a	1	/	1	1	1	1	1	1	09	S Abi naya
11	912619105003	ABITHA P	IV &VIII	1	/	1	/	1	/	1	/	1	1	10	P. Abitha
12	912619105004	ARTHY N	IV &VIII	1	1	1	1	1	/	/	1	1	1	10	O. Athy
13	912619105005	DEEPIKA R	IV &VIII	1	1	a	a	1	/	1	1	1	1	08	R. Dar
14	912619105007	NISHA S	IV &VIII	1	1	/	/	1	1	1	1	1	1	10	S.NIShae
15	912619105008	PAVITHRA M	IV &VIII	1	1	/	1	1	/	1	1	1	1	10	M. fear
16	912619105009	PRAGADEESHWARI A	IV &VIII	1	1	/	/	1	/	1	/	1	1	10	APragadechus
17	912619105010	SIVARANJANI S	IV &VIII	1	1	1	1	1	a	1	1	1	1	09	S. Suvaranj
18	912619105301	RAGAVI R	IV &VIII	1	1	1	1	1	/	1	1	1	1	10	R. Rageri

**COURSE COORDINATOR** 

Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

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### Report on Value Added Course

Title:

REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS

T.Parthiban,

Resource Person:

Assistant professor,

EEE department, SBECW.

Date of conduct from:

30.01.2023

To: **03.02.2023** 

Duration:

30 Hours

Organized Department:

ELECTRICAL AND ELECTRONICS ENGINEERING

Participant Year:

2/3/4

Semester:

**EVEN** 

No. of Students Registered:

18

Venue:

Tutorial Hall:42, SBECW

### Outcome of Value Added Course (VAC)

At the end of the Course, Students can able to

- Explain about the Hardware Overview Download and Install the Arduino IDE Arduino IDE and its Syntax.
- Describe about using Variables Blink an LED digitalRead () and Serial Port Communication analogRead () and Serial Port Communications Reading Analog Pins.
- Obtain insight about converting the Input to a Voltage Fade an LED with Pulse Width Modulation using analog Write ().
- Comprehend about If-Else Statement Comparison Operators and Condition For Loop Iteration How to Use Arrays Switch Case Statement.
- Demonstrate about blink an LED without using the delay () Function.
- Illustrate about analog I/O and Serial Communications Analog Input Calibration -Smoothing Data.

No. of students successfully completed the VAC course is <u>18</u> students based on the following assessment process.

### Assessment Process

Students, who are securing **more than 60% on total score** and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted. Total Score = (0.5 \*Attendance in VAC out of 100 percentage + 0.5 \*Test mark in VAC out of 100 marks)

**Course Coordinator** 

HOD EEE

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

KAIKKURICHI,

PUDUKKOTTAI - 622 303.

Principal

PRINCIPAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI - 622 303

PUDUKKOTTAI DISTRICT

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COLLEGE FOR WOMEN
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## DEPARTMENT OF EEE

# CERTIFICATE OF PARTICIPATION

This is to certify that Ms. GOKULAPRAVEENA A (912621105001), II year has successfully completed the Certificate Course on "REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS" held at the college from 30<sup>th</sup> January 2023 to 3<sup>rd</sup> February 2023 (5 Days).

COURSE COORDINATOR

Kaikkurchi - 622 303, Pudukkottai Dt





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KAIKKURICHI, PUDUKKOTTAI-622303

## DEPARTMENT OF EEE

## CERTIFICATE OF PARTICIPATION

This is to certify that Ms. <u>KAYALVIZHI K (912620105001),III year</u> has successfully completed the Certificate Course on <u>"REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS"</u> held at the college from 30<sup>th</sup> January 2023 to 3<sup>rd</sup> February 2023 (5 Days).

COURSE COORDINATOR

HOD/EEE

PRINCIPAL

Dr. S.THILAGAVATHI M.E., Ph.D.,

RI BHARATHI ENGINEE

Kaikkurchi - 622 303, Pudukkottai Dt.









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## DEPARTMENT OF EEE

# CERTIFICATE OF PARTICIPATION

This is to certify that Ms. <u>AASHIKA R (912619105001),IV year</u> has successfully completed the Certificate Course on <u>"REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS"</u> held at the college from 30<sup>th</sup> January 2023 to 3<sup>rd</sup> February 2023 (5 Days).

(175/ ny

COURSE COORDINATOR

Bland

HOD/EEE

PRINCIPAL

Dr. S.THILAGAVATHI M.E., Ph.D.

PRINCIPAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.







# SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai- 622 303. DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### ACADEMIC YEAR 2022-2023 / EVEN SEMESTER

### CERTIFICATE COURSE

### REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS

Name of student:			Year/Sem:
AU Reg.No:			
MULTIPLE CHOIC	CE OUESTIONS (25	5 X1 =25 MARKS)	
1. What is Arduin		20 11414161	
a) Programming	language	b) Image editing softv	vare
c) Open-source e	lectronics platform		
2. What language	is a typical Arduino	code based on?	
a) Assembly Cod	e b) Python		
c) Java	d) C/C++		
3. Arduino shield	s are also called as _		
a) Another Ardui	nos b) Extra perip	herals	
c) Add on module	es d) Connectivit	y modules	
4. What language	is the Arduino IDE l	built on?	
a) Java	b) HTML		
c) C/C++	d) Python		
5. Arduino IDE c	onsists of 2 functions	s. What are they?	
a) Loop() and bui		b) Build() and loop	0()
c) Setup() and but	- 1	d) Setup() and loop	
6. Arduino Codes	are referred to as	in the Arduino	IDE 1 ~ (
a) sketches	b) drawings		$($ $\times$ $\downarrow$ $\sim$ $\downarrow$
c) links	d) notes		
			Dr. S.THILAGAVATHI M.E.,Ph.D.,
7. What is the def	ault bootloader of the	Arduino UNO?	PRINCIPAL SRI BHARATHI ENGINEERING
a) AIR-boot	b) GAG		COLLEGE FOR WOMEN
c) Optiboot bootle	oader d) Bare box		Kaikkurchi - 622 303, Pudukkottai Dt.
8. What does p re	fer to in ATmega328	p?	
a) Programmable		•	
c) Production	d) Pico-F		

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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- a) It enables the programmer to access all of Arduino's core functionality
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- 12. What is the microcontroller used in Arduino UNO?
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- b) AT91SAM3x8E
- c) ATmega2560
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- 13. Which Arduino Board contains an onboard joystick?
- a) Arduino Nano
- b) Arduino UNO
- c) Arduino Esplora
- d) Arduino Due

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- 14. What is the function of the IOREF pin on the Arduino UNO?
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22. Why does every compilation of a source code in Arduino check for previous compilations?
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a) To communicate with the computer b) To communicate with the internet
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25. Which chipset is the LCD library for Arduino based on? a) Hitachi HDD4780 b) Hitachi HD46780 c) Hitachi HD45780 d) Hitachi HD44780

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# ACADEMIC YEAR 2022-2023 / EVEN SEMESTER CERTIFICATE COURSE REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS.

### **ANSWER KEY FOR MCQ**

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

Dr. S.THILAGAVATHIM.E., Ph.D.,

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COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

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### ACADEMIC YEAR 2022-2023 / EVEN SEMESTER

### CERTIFICATE COURSE

REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS	
Name of student: A. Gokula Praveena Year/Sem: II /1	V
AU Reg.No: 912621105001	
MULTIPLE CHOICE QUESTIONS (25 X1 =25 MARKS)  1. What is Arduino?  a) Programming language b) Image editing software c) Open-source electronics platform d) Text editor	
<ul> <li>2. What language is a typical Arduino code based on?</li> <li>a) Assembly Code b) Python</li> <li>c) Java d) C/C++</li> </ul>	
3. Arduino shields are also called as  a) Another Arduinos b) Extra peripherals  c) Add on modules d) Connectivity modules	
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8. What does p refer to in ATmega328p?	
a) Programmable on chip b) Power-Pico  Dr. S.THILAGAVATHI M.E., Ph.D.,  PRINCIPAL	
c) Production d) Pico-Power SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN	

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### ACADEMIC YEAR 2022-2023 / EVEN SEMESTER

### CERTIFICATE COURSE

REAL TIME APPLICATIONS OF ARDUINO UNO BO	DARDS
Name of student: S. Ramadevi	Year/Sem: III /VI
AU Reg.No: 91262010 5002	
MULTIPLE CHOICE QUESTIONS (25 X1 =25 MARKS)	
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### ACADEMIC YEAR 2022-2023 / EVEN SEMESTER

### **CERTIFICATE COURSE**

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Vame of student: AABHIKA-R
W Reg.No: 912619105001
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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING <u>ACADEMIC YEAR 2022-2023 / EVEN SEMESTER</u>

### MARK SHEET FOR CERTIFICATE COURSE

### REAL TIME APPLICATIONS OF ARDUINO UNO BOARDS

S.NO	NAME	REG NO.	YEAR/ SEM	CONTRACTOR STATE OF THE STATE O	ACE 50%	VAC - 50%	OVERALL MARK	
				No of Session Attended	MARKS	No of Correct Answer	MARKS	(A+B)
1	GOKULAPRAVEENA A	912621105001	II&IV	10	100	22	88	94
2	SUMITHRA S	912621105004	II&IV	10	100	24	96	98
3	KAYALVIZHI K	912620105001	III &VI	9	90	22	88	89
4	RAMADEVI S	912620105002	III &VI	10	100	24	96	98
5	SRINANTHANA S	912620105003	III &VI	10	100	22	88	94
6	KAVIYA R	912620105302	III &VI	10	100	21	84	92
7	KOPPERUNDEVI S	912620105303	III &VI	10	100	23	92	96
8	SRIBHARATHI S	912620105305	III &VI	10	100	24	96	98
9	AASHIKA R	912619105001	IV & VIII	10	100	20	80	90
10	ABINAYA S	912619105002	IV &VIII	9	90	23	92	91
11	ABITHA P	912619105003	IV &VIII	10	100	21	84	92
12	ARTHY N	912619105004	IV & VIII	10	100	24	96	98
13	DEEPIKA R	912619105005	IV &VIII	8	80	24	96	88
14	NISHA S	912619105007	IV &VIII	10	100	21	84	92
15	PAVITHRA M	912619105008	IV &VIII	10	100	20	80	90
16	PRAGADEESHWARI A	912619105009	IV &VIII	10	100	23	92	96
17	SIVARANJANI S	912619105010	IV &VIII	9	90	22	88	89
18	RAGAVI R	912619105301	IV &VIII	10	100	23	92	96

**COURSE COORDINATOR** 

Dr. S.THILAGAVATHIM.E., Ph.D.,
PRINCIPAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt. HoD/EEE

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KAIKKURICHI,

PUDUKKOTTAI - 622 303.

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Criteria 2

**Teaching-Learning and Evaluation** 

350

**Key Indicator- 2.3. Teaching- Learning Process (40)** 

2022-2023

## ELECTRICAL AND ELECTRONICS ENGINEERING

PARTICIPATIVE LEARNING
SYMPOSIUM, SEMINAR AND WORKSHOP



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamilnadu - 622 303, India DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING PARTICIPATIVE LEARNING(SYMPOSIUM, SEMINAR, WORKSHOP)

### **ACADEMIC YEAR 2022-2023**

s.NO	REGISTER NO	NAME	YEAR / SEM	NAME OF THE LEARNING METHOD
1	912621105001	GOKULAPRAVEENA A	II/IV	PARTICIPATIVE LEARNING- SYMPOSIUM
	912621105004	SUMITHRA S		
2	912620105302	KAVIYA R	III/VI	
	912620105303	KOPPERUNDEVI S		
	912620105003	SRINANTHANA S		
	912620105305	SRIBHARATHI S		
3	912620105001	KAYALVIZHI K	III/VI	
	912620105003	SRINANTHANA S		
	912620105305	SRIBHARATHI S		
4	912620105001	KAYALVIZHI K	III/VI	PARTICIPATIVE LEARNING- SEMINAR
	912620105003	SRINANTHANA S		
5	912619105002	ABINAYA S	IV/VII	
	912619105004	ARTHY N		
	912619105005	DEEPIKA R		
	912619105008	PAVITHRA M		
6	912619105002	ABINAYA S	IV/VII	PARTICIPATIVE LEARNING- WORKSHOP
	912619105008	PAVITHRA M		
	912619105009	PRAGADEESHWARI A		
	912619105010	SIVARANJANI S		
7	912619105009	PRAGADEESHWARI A	IV/VIII	PARTICIPATIVE LEARNING- SYMPOSIUM
	912619105301	RAGAVI R		

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Department of Electrical and Electronics Engineering

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Paper Presentation / Event / Model Display organized by the Department of Electrical and Electronics Engineering, Chendhuran College of Engineering and Technology, held on 3rd March 2023.

HOD/EEE Dr.L.Rajamohan Dr. S.THILAGAVATHI M.E., Ph.D.

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Kalkkurchi - 622 303, Pudukkot

Dr. K.Ganesh Babu

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College of Engineering and Technology, held on 3rd March 2023.

HOD/EEE Dr.L.Rajamohan PRINCIPAL PRINCI

PRINCIPAL Dr. AVM.S. Karthick

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Shri. AVM.Selvara



# Alagappa Chettiar Government College of Engineering and Technology



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Dr. S.THILAGAVATHI ME. Ph.D.

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at ALCONESY'23 conducted by Alagappa Chettiar Gov	vernment College of Engineering
and Technology, Karaikudi on 1st March 2023.	

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and Technology, Karaikudi on	1st March 2023.	

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/EEE

'HOD/EEE Dr.L.Rajamohan Dr. S.THILAGAVATHI M. 6. Ph.D.,

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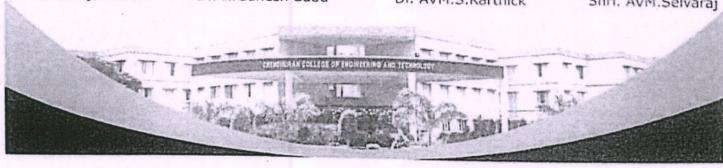
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This certificate is presented to _	K. KAYAL YIZHT - III / EEE
Of Sri Bharathi Engineering College for Women	for having participated in
"A Power Seminar on Electric Ve	hicle Technology and
Applications of Internet of Thing	gs in Electric Vehicle" on
11 01 0000	

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Coordinator

Dr. S.THILAGAVATHI M.E., Ph.D.,

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt. HOD / EEE



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Innovation Incubation and Entrepreneurship Development Centre

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Coordinator

Dr. S.THILAGAVATH M.E., Ph.D.

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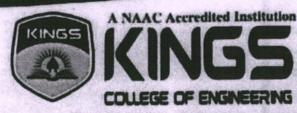
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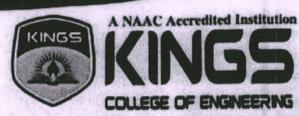
YA·S from _	SRI	BHARATHI	
NOMEN has participated in	One Day V	Vorkshop on "MICROGRII	D
LE ENERGY SYSTEMS " organi	ized by the	Department of Electrical an	d
lege of Engineering, Punalkulam, I	Pudukkotta	i(Dt), held on 04.11.2022.	
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RINCIPAL ATHI ENGINEERING		s. Menut.	
	LE ENERGY SYSTEMS " organ	LE ENERGY SYSTEMS " organized by the lege of Engineering, Punalkulam, Pudukkotta	LE ENERGY SYSTEMS " organized by the Department of Electrical and lege of Engineering, Punalkulam, Pudukkottai(Dt), held on 04.11.2022.

Mr.S.R.KARTHIKEYAN, APPER 622 303, Puduk Propial BERT MARTIN RUBAN Map THIRUMAGAL, AP/EEE

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ENGINEERING COLLE	GE FOR WOMEN	has participated in Or	e Day Wo	orkshop on "MICROGRID
				epartment of Electrical and
Electronics Engineering,	Kings College of Engine	eering, Punalkulam, Pud	lukkottai(	Dt), held on 04.11.2022.
	MS			

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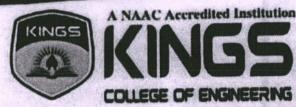
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			W CONCORD

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Electronics Engineering, Kings College of Engineering, Punalkulam, Pudukkottai(Dt), held on 04.11.2022.

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Mr.S.R.KARTHIKEYAN, AP/EEE 622 303, Puduk DE ALBERT MARTIN RUBAN

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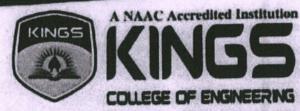
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ENGINEERING COL				ne Day V	Workshop on "MICROGRID
			SYSTEMS" organiz	ed by the	Department of Electrical and
Electronics Engineerin	g, Kings Col	lege of Engine	ering, Punalkulam, Pu	ıdukkottı	ai(Dt), held on 04.11.2022.

Dr. S.THILAGAVATHI M.E., Ph.D.,

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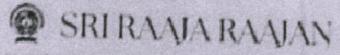
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In The National Level Technical Symposium TECHSAT 23 Held On 20th March 2023

Organized By The Department of EEE

Dr. S.THILAGAVATHI M.E. Ph.D.

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