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 – 1

CURRICULAR ASPECTS

Submitted by

IQAC

Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women

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

1.2 Academic Flexibility (30)

1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

AND

1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

VAC Title:	**ESP8266 NODE MCU FOR IOT**				
Resource Person:	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. Mail id: sdprotrichy@gmail.com				
Date of conduct from :	**03.08.2022**	To:	**09.08.2022 (except Sunday 07.08.2022)**	Duration:	**36 Hours**
Organized Department :	**ELECTRICAL AND ELECTRONICS ENGINEERING**				
Participant Year:	**3 ,4**	Semester:	**ODD**	No. of Students Registered :	**16**
Venue:	Tutorial Hall:42 ,SBECW				

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SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

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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:

Name	Mr.J.Mathes Kumar
Designation:	Senior Embedded Developer
Company name with address	**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

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

22/7/22

HoD/EEE
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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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KAIKKURUCHI, PUDUKOTTAI – 622 303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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 HOUR	

VAC COORDINATOR

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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

VAC COORDINATOR

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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	YEAR/ SEM	03.08.22		04.08.22		05.08.22		06.08.22		08.08.22		09.08.22		NO. OF CLASS ATTENDED	SIGN OF STUDENT
				F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N		
1	912620105001	KAYALVIZHI K	III &V	/	/	/	/	/	/	/	/	/	/	/	/	12	K.kayalvizhi
2	912620105002	RAMADEVI S	III &V	/	/	/	/	/	/	/	/	/	/	/	/	12	S.Ramadevi
3	912620105003	SRINANTHANA S	III &V	/	a	/	/	/	/	/	/	/	/	/	/	11	S.Srinanthana
4	912620105302	KAVIYA R	III &V	/	/	/	/	/	a	/	/	/	/	/	/	11	R.Kaviya
5	912620105303	KOPPERUNDEVI S	III &V	/	/	/	/	/	/	/	/	/	/	/	/	12	S.Koppe.
6	912620105305	SRIBHARATHI S	III &V	/	/	/	/	/	/	/	/	/	/	/	/	12	S.SriBharathi
7	912619105001	AASHIKA R	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	R.Aashika
8	912619105002	ABINAYA S	IV &VII	a	a	/	/	/	/	/	/	/	/	/	a	09	S.Abinaya
9	912619105003	ABITHA P	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	P.Abitha

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10	912619105004	ARTHY N	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	D.Arthy
11	912619105005	DEEPIKA R	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	R.Deepi
12	912619105007	NISHA S	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	S.Nisha
13	912619105008	PAVITHRA M	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	M.Beeef
14	912619105009	PRAGADEESHWARI A	IV &VII	a	a	/	/	/	/	/	/	/	/	/	/	10	APragadeeshwari
15	912619105010	SIVARANJANI S	IV &VII	/	/	/	/	/	/	/	/	/	/	/	/	12	S.Sivaranjani
16	912619105301	RAGAVI R	IV &VII	/	/	/	/	a	a	/	/	/	/	/	/	10	R.Ragavi

VAC COORDINATOR

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Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Report on Value Added Course

Title:	**ESP8266 NODE MCU FOR IOT**
Resource Person:	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. Mail id: sdprotrichy@gmail.com

Date of conduct from :	**03.08.2022**	To:	**09.08.2022 (except Sunday 07.08.2022)**	Duration:	**36 Hours**
Organized Department :	**ELECTRICAL AND ELECTRONICS ENGINEERING**				
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 | **HoD/ EEE** | **Principal**

12/8/22

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12/8/22

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PUDUKKOTTAI DISTRICT

Dr. S.THILAGAVATHI M.E.,Ph.D.,
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No. 64, 1st floor,Sri Krishna complex,
Opp to E.R Higher Sec School,Chinthamani,Trichy-2.
Email id: sdprotrichy@gmail.com

SD PRO SOLUTIONS

CERTIFICATE OF PARTICIPATION

This is to certify that Ms **RAMADEVI S** , 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.,
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Email id: sdprotrichy@gmail.com

SD PRO SOLUTIONS

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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SD PRO SOLUTIONS
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Opp to E.R Higher Sec School,Chinthamani,Trichy-2.
Email id: sdprotrichy@gmail.com

CERTIFICATE OF PARTICIPATION

This is to certify that Ms **AASHIKA R**, 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.,
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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: **Year/Sem:**

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?
   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
   c) 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 b)12mA c)100mA d)1A

8. What is the optimum supply current that is required to operate the ESP8266 Wifi Module?
   a) 28A b)13mA c) 100mA d) 1A

9. What kind of device is the ESP8266 Wifi module?
   a) Passive Sensor b) Active Sensor
   c) Networking Devices d) Swiching Device

10. What is type of waves that the ESP8266 Wifi module detects?
    a) Infra red b) Radio signal
    c) Dc signal d) Hybrid signal

11. What mode does the ESP8266 Wifi module switch to when fed the sequence 11 to its GPIO-o and GPIO-2 Pins?
    a) URAT mode b) Sleep mode
    c) Active mode d) Flash mode

12. What mode does the ESP8266 Wifi module switch to when fed the sequence 01 to its GPIO-o and GPIO-2 Pins?
    a) URAT mode b) Sleep mode
    c) Active mode d) Flash mode

13. Which are the following IDEs are suitable for NodeMCU programming?
    a) Node MCU WebIDE b) Lua tool
    c) Arduino IDE d) None of These

14. Baud Rate of NodeMCU is _____.
    a) 9600 b) 115200 c) 1115200 d) 8421

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15. How many PWM pins/channels are present in ESP8266?
    a) 6 b) 8 c) 10 d) 4

16. Which pin is used to power any Micro controller board through external power?
    a) Vin b) Vcc c) GND d) EN

17. What are the two buttons present in the ESP8266 board?
    a) Vcc and GND b) 3V3 and GND
    c) RST and EN d) FLASH and RST

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

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 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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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2022-2023 / ODD SEMESTER

VALUE ADDED COURSE
ESP8266 NODE MCU FOR IOT.

ANSWER KEY FOR MCQ

1	a	2	a	3	c	4	c	5	a
6	a	7	b	8	c	9	c	10	b
11	d	12	a	13	c	14	b	15	d
16	b	17	d	18	d	19	c	20	b
21	d	22	c	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. Kayalvizhi **Year/Sem:** III / V

AU Reg.No: 912620105001

MULTIPLE CHOICE QUESTIONS (25 X1 =25 MARKS)

23/25

1. What is ESP8266?
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   c) Pressure sensor
   d) Bluetooth module

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4. How many pins are present in the ESP8266 Wifi Module?
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    c) Apparent Digital Communication d) None of the above

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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 **Year/Sem:** IV / VII

AU Reg.No: 912619105004

20/25

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?
   a) Creates a Library for Lua Script
   b) Tells the time
   c) Home automation
   d) All of these

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

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

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 c)100mA d)1A X

8. What is the optimum supply current that is required to operate the ESP8266 Wifi Module?
   a) 28A b) 13mA c) 100mA d) 1A

9. What kind of device is the ESP8266 Wifi module?
   a) Passive Sensor b) Active Sensor
   c) Networking Devices d) Swiching Device

10. What is type of waves that the ESP8266 Wifi module detects?
    a) Infra red b) Radio signal
    c) Dc signal d) Hybrid signal

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11. What mode does the ESP8266 Wifi module switch to when fed the sequence 11 to its GPIO-o and GPIO-2 Pins?
    a) URAT mode b) Sleep mode
    c) Active mode d) Flash mode

12. What mode does the ESP8266 Wifi module switch to when fed the sequence 01 to its GPIO-o and GPIO-2 Pins?
    a) URAT mode b) Sleep mode
    c) Active mode d) Flash mode

13. Which are the following IDEs are suitable for NodeMCU programming?
    a) Node MCU WebIDE b) Lua tool
    c) Arduino IDE d) None of These

14. Baud Rate of NodeMCU is _____.
    a) 9600 b) 115200 c) 1115200 d) 8421

15. How many PWM pins/channels are present in ESP8266?
    a) 6 b) 8 c) 10 d) 4

16. Which pin is used to power any Micro controller board through external power?
    a) Vin b) Vcc c) GND d) EN

17. What are the two buttons present in the ESP8266 board?
    a) Vcc and GND b) 3V3 and GND
    c) RST and EN d) FLASH and RST

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

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 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

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ACADEMIC YEAR 2022-2023 / ODD SEMESTER

VALUE ADDED COURSE

ESP8266 NODE MCU FOR IOT

Name of student: S.Nisha **Year/Sem:** IV / VII

AU Reg.No: 912619105007

21/25

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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?
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6. What will happen if we supply a voltage of 250kV to the ESP8266 Wifi Module?
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ACADEMIC YEAR 2022-2023 / ODD SEMESTER

MARK SHEET FOR VALUE ADDED COURSE
ESP8266 NODE MCU FOR IOT

S.NO	REG. NO	NAME	YEAR/ SEM	ATTENDACE 50% (A)		VAC –MCQ 50%(B)		OVERALL MARK (A+B)
				No of Session Attended	MARKS	No of Correct Answer	MARKS	
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 COORDINATOR

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