Indra Ganesan
COLLEGE OF ENGINEERING

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

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

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 2

TEACHING-LEARNING AND EVALUATION

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING

Criteria2	Teaching-Learning and Evaluation	350

KeyIndicator-2.3.Teaching-Learning Process (40)

2020-2021

PARTICIPATIVE LEARNING

ELECTRONICS AND COMMUNICATION ENGINEERING and ME (VLSI DESIGN)

Activity	Number of Students Attended	Page No.
Value Added Course(VAC)	106	3
TOTAL STUDENTS ATTENDED	106	-

Criteria2	Teaching-Learning and Evaluation	350

KeyIndicator-2.3.Teaching-Learning Process(40)

2020-2021

ELECTRONICS AND COMMNUINCATION ENGINEERING and ME (VLSI DESIGN)

PARTICIPATIVE LEARNING

VALUE ADDED COURSE

Indra Ganesan
COLLEGE OF ENGINEERING

Madural Main Road (NH-45B),Manikandam,Trichy-12.
Approved by AICTE, NewDelhi & Affiliated to Anna University, Chennai

Department of Electronics and Communication Engineering

Academic Year 2020-2021 –Odd Semester

25.01.2021

DEPARTMENT CIRCULAR

Department of Electronics and Communication Engineering and IQAC of IGCE in association with Galwin Technology, is going to organize Value Added Course for all Second, Third and Final year students on **"ARDUINO PROGRAMMING"** from **01.02.2021 to 05.02.2021**. Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in online mode.

Resource Person Detail	Mr.K.C.Tamil Vendhan, The Human Resource Manager, Galwin Technology,Trichy
Venue	**Online Mode Link:** https://us05web.zoom.us/j/2423859769?pwd=K3JZd1JiS3FqTk1kenJzWStNQ0NDQT09

HOD/ECE

PRINCIPAL

Cc:

- Principal office
- IQAC Co-Ordinator
- Class In charges - II, III & IV-Year
- II, III & IV-Year ECE Students
- Office File
- Notice Board

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

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Value Added Course

"ARDUINO PROGRAMMING"

SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	Introduction to Embedded systems, Introduction to Arduino programming	3	01.02.2021
2	Basic Components, Introduction to the Concept of IoT Devices	3	01.02.2021
3	Types of Arduino, Arduino Toolchain	3	02.02.2021
4	Arduino Programming Structure –Sketches – Pins	3	02.02.2021
5	Input/Output From Pins Using Sketches	3	03.02.2021
6	Introduction to Arduino Shields	3	03.02.2021
7	Integration of Sensors and Actuators with Arduino	3	04.02.2021
8	IoT configurations, General Hardware Interfacings:	3	04.02.2021
9	Work with LED Controlled by Switch/potentiometer, 7 segment displays. How to connect relays andservomotors to ARDUINO Board.	3	05.02.2021
10	Project Based on embedded system design using Arduino board.	3	05.02.2021
11	Exam	1	05.02.2021
	Total Hours (Excluding Exam)	**30**	-

VAC Coordinator

HOD/ECE

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Value Added Course

"ARDUINO PROGRAMMING"

STUDENTS PARTICIPATION LIST

S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
1	811217106001	Aishwariya S	IV/ECE
2	811217106002	Aneesha A	IV/ECE
3	811217106003	Deepika B	IV/ECE
4	811217106004	Durga D	IV/ECE
5	811217106005	Gangadevi M	IV/ECE
6	811217106006	Janani C	IV/ECE
7	811217106009	Karthick K	IV/ECE
8	811217106010	Kosiananth R	IV/ECE
9	811217106011	Lakshmi M	IV/ECE
10	811217106012	Manikandan M	IV/ECE
11	811217106013	Mekala Devi S	IV/ECE
12	811217106014	Pandimeena R	IV/ECE
13	811217106016	Preethi V	IV/ECE
14	811217106017	Raashitha Jannath A	IV/ECE
15	811217106018	Ranjitha T	IV/ECE
16	811217106019	Riyas Mohammed K	IV/ECE
17	811217106020	Saimouli N	IV/ECE
18	811217106021	Sarumathi A	IV/ECE
19	811217106022	Shalini M	IV/ECE
20	811217106023	Siva Sankari M	IV/ECE
21	811218106001	Abinaya R	III/ECE
22	811218106002	Akila K	III/ECE
23	811218106004	Arthi M	III/ECE
24	811218106005	Azhagu Meena M	III/ECE
25	811218106006	Devi K	III/ECE
26	811218106007	Dhanalakshmi S	III/ECE
27	811218106008	Hari Krishnan S	III/ECE
28	811218106009	Janani V	III/ECE
29	811218106010	Jenifer C	III/ECE
30	811218106011	Jenifer S	III/ECE
31	811218106012	Kesavamurthi M	III/ECE
32	811218106013	Kiruthika S	III/ECE
33	811218106015	Maria Francis D	III/ECE
34	811218106016	Ragavi A	III/ECE

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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
35	811218106017	Ruthramoorthy M	III/ECE
36	811218106018	Sabarinathan K	III/ECE
37	811218106019	Sarmila M	III/ECE
38	811218106020	Sumathi	III/ECE
39	811218106021	Thivya Priya R	III/ECE
40	811219106001	Dayana P	II/ECE
41	811219106002	Devika K	II/ECE
42	811219106003	Dinesh J	II/ECE
43	811219106004	Mohana Sundaram K	II/ECE
44	811219106005	Ravikumar B	II/ECE
45	811219106006	Santhanaraj A	II/ECE
46	811219106007	Shyam CR	II/ECE
47	811219106008	Srikanth M	II/ECE
48	811219106009	Surendran S	II/ECE
49	811219106010	Surya V	II/ECE
50	811219106011	Swetha K	II/ECE
51	811219106301	Yuvashree S	II/ECE
52	811219106701	Vijayalakshmi V	II/ECE
53	811219106702	Ponnarasu S	II/ECE

VAC Coordinator

HOD/ECE

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REPORT ON VALUE ADDED COURSE

Title:	**"ARDUINO PROGRAMMING"**
Resource Person:	Mr.K.C.TamilVendhan, The Human Resource Manager, Galwin Technology, Trichy

Date of conduct from :	01.02.2021	To:	05.02.2021	Duration:	**30 Hours**
Organized Department :	**Electronics and Communication Engineering**				
Participant Year:	**2,3,4**			No. of Students Registered :	**53**
Venue:	**Online Mode Link :** **https://us05web.zoom.us/j/2423859769?pwd=K3JZd1JiS3FqTk1kenJzWStNQ0NDQT09**				

Outcome of Value Added Course (VAC): At the end of the Course, Students can be able to

- Know about the embedded systems and the structure of Arduino program
- Explain the basic concepts of IoT devices
- Know the types of Arduino and concepts of Arduino Tool chain
- Explain the concept of sketches and pins in Arduino programming structure
- Know the concepts of Aduino shields, Sensors and Actuators
- Develop a project based on embedded system design using Arduino board.

Assessment Process

- Students, who are securing **more than 70% on total score** and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted
- Total Score = (0.5 *Attendance in VAC out of 100 percentage + 0.5 *Test mark in VAC out of 100 marks)

VAC Coordinator **HoD/ECE** **Principal**

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COLLEGE OF ENGINEERING

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SAMPLE PHOTOS OF VAC ON ARDUINO PROGRAMMING

Title:	**"ARDUINO PROGRAMMING"**
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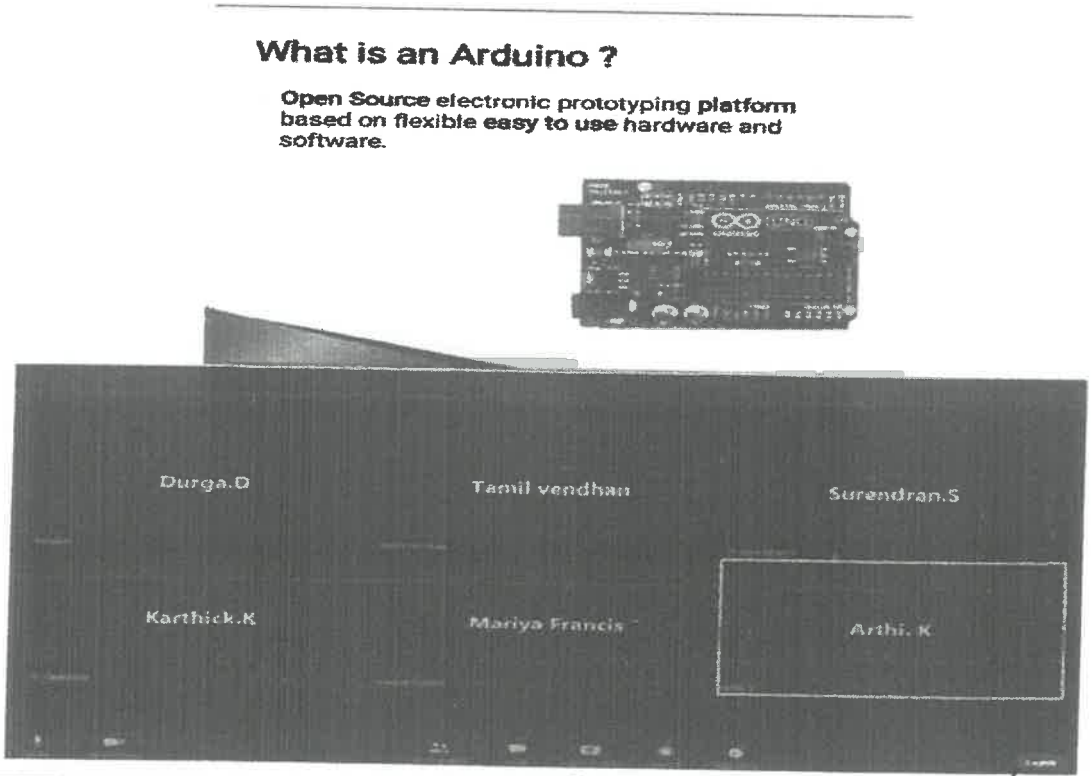
Sample Photos



VAC Coordinator **HoD/ECE** **Principal**

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Name of the Student: **Year/Sem:**

AU Register Number:

Value Added Course

"ARDUINO PROGRAMMING"

MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

1. What is Arduino?
a) Programming language
b) Image editing software
c) Open-source electronics platform
d) Text editor

2. How many types of Arduino do we have?
a) 4
b) 8
c) 12
d) 16

3. What language is a typical Arduino code based on?
a) Assembly Code
b) Python
c) Java
d) C/C++

4. Arduino shields are also called as _____
a) Another Arduinos
b) Extra peripherals
c) Add on modules
d) Connectivity modules

5. What language is the Arduino IDE built on?
a) Java
b) HTML
c) C/C++
d) Python

6. How many analog pins are used in Arduino Mega board?
a) 12
b) 16
c) 8
d) 14

7. Arduino IDE consists of 2 functions. What are they?

a) Loop() and build() and setup()
b) Build() and loop()
c) Setup() and build()
d) Setup() and loop()

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8. Arduino Codes are referred to as_____in the Arduino IDE.
a) sketches
b) drawings
c) links

d) notes

9. What is the default bootloader of the Arduino UNO?
a) AIR-boot
b) GAG
c) Optiboot bootloader
d) Bare box

10. What does p refer to in ATmega328p?
a) Programmable on chip
b) Power-Pico
c) Production
d) Pico-Power

11. What is the use of the Arduino.h header file?
a) It enables the programmer to access all of Arduino's core functionality
b) It doesn't have any use and can be omitted at any point of time in the code
c) It gives root access to the microcontroller's file system
d) It allows other people to create libraries for the Arduino code

12. What is the use of the Vin pin present on some Arduino Boards?
a) To ground the Arduino Board
b) To power the Arduino Board
c) To provide a 5V output
d) Is used for plugging in 3V supply

13. What is the correct execution process of an Arduino code?
a) Editor->Preprocessor->Compiler
b) Preprocessor->Editor->Compiler
c) Compiler->Preprocessor->Editor
d) Editor->Compiler->Preprocessor

14. What is the microcontroller used in Arduino UNO?
a) ATmega32114
b) AT91SAM3x8E
c) ATmega2560
d) ATmega328p

15. Which board is the first to use a microcontroller within the build USB?
a) RedBoard
b) Leonardo
c) LilyPad
d) UNO

16. Which Arduino Board contains an onboard joystick?
a) Arduino Nano
b) Arduino UNO
c) Arduino Esplora
d) Arduino Due

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17. What is the function of the IOREF pin on the Arduino UNO?
a) To take input voltage and set it as a reference for all GPIO operations
b) To provide a constant 12V DC supply
c) To provide ground

d) To provide the voltage corresponding to the standard GPIO working voltage of the board

18. Which processor supports the Arduino Zero?
a) ARM Cortex M0+
b) ARM Cortex M3
c) Atmega32u4
d) Atmega328P

19. Which software is used to upload the Arduino Sketches to the board?
a) avrgcc
b) g++
c) cpython for windows
d) avrdude

20. What is the use for the 2 serial pins on the Arduino Diecimila?
a) To send PWM signals
b) To send and receive Serial TTL signals
c) To send and receive GPIO digital signals
d) To receive analog signals

21. Which Arduino Boards use the Atmega2560?
a) Arduino Micro and Due
b) Arduino Nano and Fio
c) Arduino Mega and Mega ADK
d) Arduino Uno and Robot

22. What is the operating voltage of Atmega328?
a) 1.9V to 5V
b) 1.8V to 5.5V
c) 1.1V to 5V
d) 12V to 9V

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23. Which Arduino Boards use the Atmega32U4?
a) Arduino Uno
b) None Mega
c) Arduino Micro
d) Arduino Leonardo

24. Is the Arduino code an Object-Oriented programming language or a Procedural programming language?
a) The Arduino Code follows the Top-Down Procedural ideology
b) The Arduino Code follows a custom Procedural Ideology
c) The Arduino Code follows the Object-Oriented ideology
d) The Arduino Code follows the Bottom-Up Procedural ideology

25. What is the difference between an IDE and a compiler?
a) The compiler executes the code while the IDE gives a graphical environment for writing the code
b) The compiler links the code to the respective files and the IDE takes it from there
c) The compiler and the IDE are the same thing
The IDE executes the code while the compiler gives a graphical environment forwriting the code

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Value Added Course

"ARDUINO PROGRAMMING"

ANSWER KEY

1	C	6	B	11	A	16	C	21	C
2	B	7	D	12	B	17	D	22	B
3	D	8	A	13	A	18	A	23	D
4	C	9	C	14	D	19	D	24	C
5	A	10	D	15	B	20	B	25	A

VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D.,
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Name of the student: Durga. D Year/sem: IV/VII

AU Register Number: 311521106024

Value Added Course

"ARDUINO PROGRAMMING"

1) C ✓
2) B ✓
3) C X
4) C ✓
5) A ✓
6) B ✓
7) D ✓
8) B X
9) C ✓
10) D ✓
11) A ✓
12) C X
13) A ✓
14) D ✓
15) B ✓
16) C ✓
17) D ✓
18) A ✓
19) D ✓
20) B ✓
21) C ✓
22) B ✓
23) D ✓
24) C ✓
25) D ✓

22/25

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Department of Electronics and Communication Engineering

Academic Year 2020-2021 – Odd Semester

VALUE ADDED COURSE ASSESMENT SHEET

ARDUINO PROGRAMMING

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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of Session Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
1	811217106001	Aishwariya S	IV/ECE	30	100	20	80	90
2	811217106002	Aneesha A	IV/ECE	27	90	19	76	90
3	811217106003	Deepika B	IV/ECE	30	100	19	76	83
4	811217106004	Durga D	IV/ECE	30	100	22	84	87
5	811217106005	Gangadevi M	IV/ECE	27	90	19	76	83
6	811217106006	Janani C	IV/ECE	27	90	20	80	83
7	811217106009	Karthick K	IV/ECE	30	100	19	76	90
8	811217106010	Kosiananth R	IV/ECE	27	90	19	76	83
9	811217106011	Lakshmi M	IV/ECE	27	90	20	80	83
10	811217106012	Manikandan M	IV/ECE	27	90	19	76	83
11	811217106013	Mekala Devi S	IV/ECE	30	100	20	80	92

S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of Session Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
12	811217106014	Pandimeena R	IV/ECE	27	90	20	80	85
13	811217106016	Preethi V	IV/ECE	30	100	22	88	92
14	811217106017	Raashitha Jannath A	IV/ECE	27	90	19	76	88
15	811217106018	Ranjitha T	IV/ECE	27	90	20	80	83
16	811217106019	Riyas Mohammed K	IV/ECE	27	90	19	76	80
17	811217106020	Saimouli N	IV/ECE	30	100	20	80	82
18	811217106021	Sarumathi A	IV/ECE	27	90	19	76	89
19	811217106022	Shalini M	IV/ECE	27	90	19	76	90
20	811217106023	Siva Sankari M	IV/ECE	30	100	22	88	87
21	811218106001	Abinaya R	III/ECE	27	90	19	76	80
22	811218106002	Akila K	III/ECE	30	100	22	88	87
23	811218106004	Arthi M	III/ECE	30	100	22	88	90
24	811218106005	Azhagu Meena M	III/ECE	30	100	19	76	82
25	811218106006	Devi K	III/ECE	30	100	19	76	88
26	811218106007	Dhanalakshmi S	III/ECE	30	100	21	84	92
27	811218106008	Hari Krishnan S	III/ECE	27	90	19	76	83
28	811218106009	Janani V	III/ECE	27	90	19	76	83
29	811218106010	Jenifer C	III/ECE	27	90	19	76	83
30	811218106011	Jenifer S	III/ECE	27	90	19	76	83

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31	811218106012	Kesavamurthi M	III/ECE	30	100	19	76	88
32	811218106013	Kiruthika S	III/ECE	27	90	19	76	83
33	811218106015	Maria Francis D	III/ECE	24	80	21	84	82
34	811218106016	Ragavi A	III/ECE	27	90	20	80	85
35	811218106017	Ruthramoorthy M	III/ECE	30	100	21	84	92
36	811218106018	Sabarinathan K	III/ECE	27	90	19	76	83
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38	811218106020	Sumathi	III/ECE	27	90	22	88	88
39	811218106021	Thivya Priya R	III/ECE	27	90	19	76	92
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42	811219106003	Dinesh J	II/ECE	30	100	19	76	87
43	811219106004	Mohana Sundaram K	II/ECE	27	90	19	76	90
44	811219106005	Ravikumar B	II/ECE	30	100	20	80	90
45	811219106006	Santhanaraj A	II/ECE	30	100	19	76	88
46	811219106007	Shyam CR	II/ECE	27	90	19	76	92
47	811219106008	Srikanth M	II/ECE	27	90	19	76	83
48	811219106009	Surendran S	II/ECE	30	100	20	80	80
49	811219106010	Surya V	II/ECE	27	90	19	76	80

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50	811219106011	Swetha K	II/ECE	27	90	19	76	83
51	811219106301	Yuvashree S	II/ECE	30	100	20	80	90
52	811219106701	Vijayalakshmi V	II/ECE	27	90	19	76	83
53	811219106702	Ponnarasu S	II/ECE	24	80	21	84	82

VAC Coordinator

HOD/ECE

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GAL TECHNOLOGY

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CERTIFICATE OF PARTICIPATION

This is to certify that Ms. RAGAVI.A, III Year, ECE has successfully completed the Value Added Course on "ARDUINO PROGRAMMING" organized by Department of Electronics and Communication Engineering and IQAC of our Institution in Association with Galwin Technology from 01st February 2021 to 05th February 2021 (5days) during the Academic year 2020-2021.

Galwin Technology
Mr.K.C.Tamil Vendhan
Human Resource Manager.

Principal
IGCE

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

Indra Ganesan
COLLEGE OF ENGINEERING

Madurai Main Road (NH-45B), Manikandam, Trichy-12.
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Department of Electronics and Communication Engineering

Academic Year 2020-2021 –EVEN Semester

26.07.2021

DEPARTMENT CIRCULAR

Department of Electronics and Communication Engineering and IQAC of IGCE in association with Hitakey Infosys, is going to organize Value Added Course for all Second, Third and Final year students on **"PLC & INDUSTRIAL NETWORKING"** from **02.08.2021 to 06.08.2021**. Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in online mode.

Resource Person Detail	Mrs.Shalom Jerlin, Technical Head, Hitakey Infosys, Trichy
Venue	**Online Mode** https://us05web.zoom.us/j/2423859769?pwd=K3JZd1JiS3FqTk1kenJzWStNS0NDQT09

HOD/ECE

PRINCIPAL

Cc:

- Principal office
- IQAC Co-ordinator
- Class In charges - II, III & IV-Year
- II, III & IV-Year ECE Students
- Office File
- Notice Board

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Value Added Course

"PLC & INDUSTRIAL NETWORKING"
SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	Introduction to Logic Circuit: Logic Gates, Numbering System.	3	02.08.2021
2	Interfacing Peripheral Chips: F.F., Registers, Tristate Buffers, Latches,Decoders, Memory.	3	02.08.2021
3	Introduction to PLC: Microprocessor, I/OPorts, Isolation, Filters, Drivers, Microcontrollers/DSP, PLC/DDC.	3	03.08.2021
4	PLC Construction: What is a PLC, Why preferring PLC, PLC Memories, PLC I/O,PLC Programming, introduction to PLC Ladder, PLC Special I/O, PLC Types.	3	03.08.2021
5	PLC Basic Instructions: PLC Ladder Language, Ladder/Instruction List, PLC Basic Instructions, Basic Examples (Start Stop Rung, Entry/Reset Rung).	3	04.08.2021
6	Process Control Problems Classification: Types of Process Control, Interlock controldefinition, Sequential control definition, Random control definition, Interlockcontrol examples.	3	04.08.2021
7	Timers and Counters: Timers, Counters, Examples.	3	05.08.2021
8	Word and Branching Instruction: Data Handling Instruction, Arithmetic Instruction, PLC Internal Facilities, LogicInstruction, I/O Instruction, Program Control Instruction.	3	05.08.2021
9	Sensors, Switches, Solid State Relays, Sequential Process Control: Sequentialcontrol, Sequential control examples.	3	06.08.2021
10	Application Examples of Sequential Industrial Problem, Application Examples of Production Lines	3	06.08.2021
11	**Exam**	1	06.08.2021
	Total Hours (Excluding Exam)	30	-

VAC Coordinator

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Value Added Course

"PLC & INDUSTRIAL NETWORKING"

STUDENTS PARTICIPATION LIST

S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
1	811217106001	Aishwariya S	IV/ECE
2	811217106002	Aneesha A	IV/ECE
3	811217106003	Deepika B	IV/ECE
4	811217106004	Durga D	IV/ECE
5	811217106005	Gangadevi M	IV/ECE
6	811217106006	Janani C	IV/ECE
7	811217106009	Karthick K	IV/ECE
8	811217106010	Kosiananth R	IV/ECE
9	811217106011	Lakshmi M	IV/ECE
10	811217106012	Manikandan M	IV/ECE
11	811217106013	Mekala Devi S	IV/ECE
12	811217106014	Pandimeena R	IV/ECE
13	811217106016	Preethi V	IV/ECE
14	811217106017	Raashitha Jannath A	IV/ECE
15	811217106018	Ranjitha T	IV/ECE
16	811217106019	Riyas Mohammed K	IV/ECE
17	811217106020	Saimouli N	IV/ECE
18	811217106021	Sarumathi A	IV/ECE
19	811217106022	Shalini M	IV/ECE
20	811217106023	Siva Sankari M	IV/ECE
21	811218106001	Abinaya R	III/ECE
22	811218106002	Akila K	III/ECE
23	811218106004	Arthi M	III/ECE
24	811218106005	Azhagu Meena M	III/ECE
25	811218106006	Devi K	III/ECE
26	811218106007	Dhanalakshmi S	III/ECE
27	811218106008	Hari Krishnan S	III/ECE
28	811218106009	Janani V	III/ECE
29	811218106010	Jenifer C	III/ECE
30	811218106011	Jenifer S	III/ECE
31	811218106012	Kesavamurthi M	III/ECE
32	811218106013	Kiruthika S	III/ECE
33	811218106015	Maria Francis D	III/ECE
34	811218106016	Ragavi A	III/ECE

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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
35	811218106017	Ruthramoorthy M	III/ECE
36	811218106018	Sabarinathan K	III/ECE
37	811218106019	Sarmila M	III/ECE
38	811218106020	Sumathi	III/ECE
39	811218106021	Thivya Priya R	III/ECE
40	811219106001	Dayana P	II/ECE
41	811219106002	Devika K	II/ECE
42	811219106003	Dinesh J	II/ECE
43	811219106004	Mohana Sundaram K	II/ECE
44	811219106005	Ravikumar B	II/ECE
45	811219106006	Santhanaraj A	II/ECE
46	811219106007	Shyam CR	II/ECE
47	811219106008	Srikanth M	II/ECE
48	811219106009	Surendran S	II/ECE
49	811219106010	Surya V	II/ECE
50	811219106011	Swetha K	II/ECE
51	811219106301	Yuvashree S	II/ECE
52	811219106701	Vijayalakshmi V	II/ECE
53	811219106702	Ponnarasu S	II/ECE

VAC Coordinator

HOD/ECE

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REPORT ON VALUE ADDED COURSE

Title:	**"PLC & INDUSTRIAL NETWORKING"**
Resource Person:	Mrs. Shalom Jerlin , Technical head, Hitakey Infosys, Trichy

Date of conduct from :	02.08.2021	To:	06.08.2021	Duration:	**30 Hours**
Organized Department :	**Electronics and Communication Engineering**				
Participant Year:	**2,3,4**			No. of Students Registered :	**53**
Venue:	**Online Mode link :** **https://us05web.zoom.us/j/2423859769?pwd=K3JZd1JiS3FqTk1kenJzWStNS0NDQT09**				

Outcome of Value Added Course (VAC): At the end of the Course, Students can be able to

- Know about the industrial peripheral chips, PLC / DDC
- Know the PLC memories, PLC programming, PLC ladder and PLC types
- Explain the PLC Basic Instructions: PLC Ladder Language, Ladder/Instruction List, PLC BasicInstructions
- Know the Types of Process Control, Interlock control definition, Sequential control definition,Random control definition
- Explain the Word and Branching Instruction: Data Handling Instruction, Arithmetic Instruction, PLCInternal Facilities, Logic Instruction, I/O Instruction
- Develop Application Examples of Sequential Industrial Problem, Application Examples ofProduction Lines

Assessment Process

- Students, who are securing **more than 70% on total score** and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted
- Total Score = (0.5 *Attendance in VAC out of 100 percentage + 0.5 *Test mark in VAC out of 100 marks)

VAC Coordinator **HoD/ECE** **Principal**

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SAMPLE PHOTOS OF VAC ON PLC & INDUSTRIAL NETWORKING

Title:	**"PLC & INDUSTRIAL NETWORKING"**
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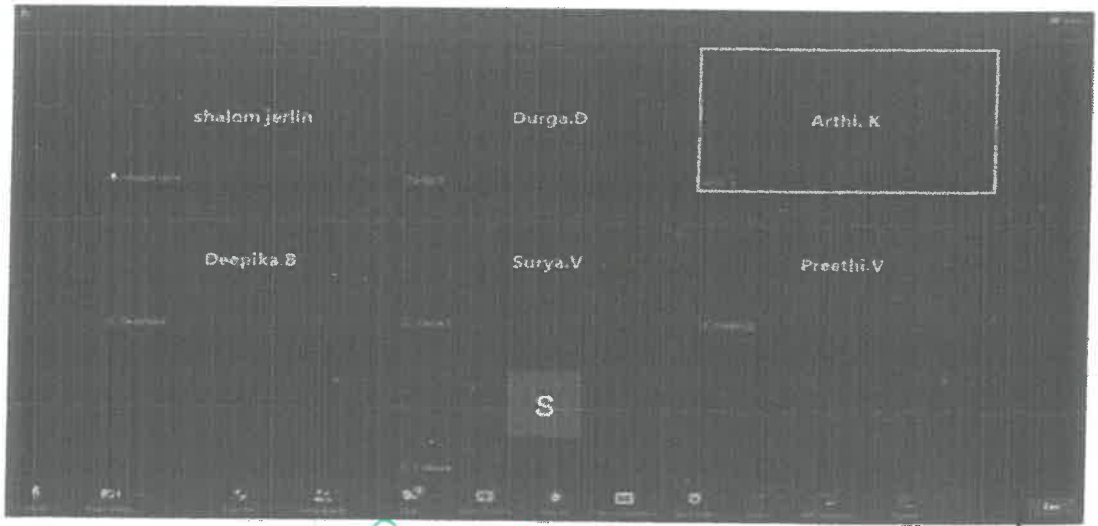
Sample Photos

- What is PLC?

  PLC is an industrial computer control system that continuously monitors the state of input devices and makes decisions based upon a custoiz prog are to control the state of output devices



VAC Coordinator **HoD/ECE** **Principal**

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Name of the Student: **Year/Sem:**

AU Register Number:

Value Added Course

"PLC & INDUSTRIAL NETWORKING"

MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

1. **Which is the first PLC model?**
   A. PLC 086
   B. PLC 085
   C. PLC 084
   D. None

2. **How many operation steps does the programmable logic controller have?**
   A. Two
   B. One
   C. Four
   D. Three

3. **In PLC operation_____checks the status at the input side**
   A. Program scan
   B. Output scan
   C. Input scan
   D. None

4. **The components that make PLC works can be divided into_____core areas**
   A. Two
   B. One
   C. Four
   D. Three

5. **In PLC operation_____retrieves the data into an output module**
   A. Output scan
   B. Input scan
   C. Program scan
   D. None of the above

6. **Before PLC's was created many industries used _____**
   A. Capacitors
   B. Relays
   C. Resistors
   D. None of the above

7. **What are the types of programmable logic controllers?**
   A. Modular, uniform PLC

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B. Fixed and Modular PLC
C. Fixed, uniform PLC
D. None of the above

8. The relays consist of _____
A. Load circuit
B. Control circuit
C. All of above
D. None of above

9. Who invented the Programmable Logic Controller (PLC)?
A. Dick Morley
B. Jonas Wenstrom
C. Thomas Davenport
D. None of the above

10. In modular programmable logic controller _____
A. Output is fixed
B. Input is fixed
C. All of above
D. None of above

11. The control logic in a programmable logic controller can be programmed by _____
A. Sequential logic
B. Structured text
C. FBD , ladder logic
D. All of the above

12. CCTV cameras is an example for_____automation
A. Office automation
B. Scientific automation
C. Industrial automation
D. Building automation

13. The PLC's can be programmed in _____
A. Instruction list, Functional block diagram
B. Ladder logic, structured text
C. Sequential function chart
D. All of the above

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14. The programmable logic controllers are used in _____
A. Cement manufacturing
B. Process automation plants
C. Glass and paper industry
D. All of the above

15. The sequences are classified into _____

A. One
B. Two
C. Three
D. Four

16. In modular type PLC, the PLC's are classified into _____

A. Transistor output PLC
B. Relay output PLC
C. Triac output PLC
D. All of the above

17. In fixed programmable logic controller _____

A. Output is fixed
B. Input is fixed
C. None of the above
D. All of above

18. In the water level storage tank, the manual mode program controls the water level by monitoring the_____switch input

A. High sensor switch
B. Low sensor switch
C. None of above
D. All of above

19. The programmable logic controllers are classified into ____according tophysical size in modular type PLC

A. Micro PLC, Nano PLC
B. Nano PLC, Mini PLC, Macro PLC
C. Mini PLC, Micro PLC
D. All of the above

20. The programmable logic controller is classified into _____

A. Three
B. One
C. Four
D. Two

21. The advantages of PLC are _____

A. Reliability is high
B. Small in size
C. Easy maintenance
D. All of the above

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22. _____is an example for light automation?

A. Street solar lightening
B. Automated bottle filling stations

C. Rocket launching
D. Smoke detectors

23. The CPU has _____

A. Processor
B. Power supply
C. Memory system
D. All of the above

24. Which one is the correct sequence for PLC operation?

A. Self-test, logic scan, output scan, input scan
B. Self-test, input scan, output scan, logic scan
C. Self-test z, input scan, logic scan, output scan
D. None of the above

25. _____is an example for scientific automation?

A. Street solar lightening
B. Automated bottle filling stations
C. Rocket launching
D. Smoke detectors

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"PLC & INDUSTRIAL NETWORKING"

ANSWER KEY

1	C	**6**	B	**11**	D	**16**	D	**21**	D
2	D	**7**	B	**12**	A	**17**	D	**22**	A
3	C	**8**	C	**13**	B	**18**	B	**23**	D
4	C	**9**	A	**14**	D	**19**	D	**24**	C
5	A	**10**	C	**15**	C	**20**	D	**25**	C

VAC Coordinator

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Name of the student : Surya V Year/Sem : II/IV

AU Registration Number : 811619106019

Value Added Course

"PLC & INDUSTRIAL NETWORKING"

1) C ✓
2) D ✓
3) C ✓
4) C ✓
5) A ✓
6) A ✗
7) B ✓
8) C ✓
9) A ✓
10) C ✓
11) D ✓
12) B ✗
13) B ✓
14) D ✓
15) D ✗
16) D ✓
17) D ✓
18) B ✓
19) C ✗
20) D ✓
21) D ✓
22) A ✓
23) D ✓

24) B ✗
25) C ✓

20/25

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Department of Electronics and Communication Engineering

Academic Year 2020-2021 – Even Semester

VALUE ADDED COURSE ASSESMENT SHEET

PLC & INDUSTRIAL NETWORKING

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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of Session Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
1	811217106001	Aishwariya S	IV/ECE	30	100	20	80	90
2	811217106002	Aneesha A	IV/ECE	30	100	20	80	90
3	811217106003	Deepika B	IV/ECE	27	90	19	76	83
4	811217106004	Durga D	IV/ECE	27	90	21	84	87
5	811217106005	Kangadevi M	IV/ECE	27	90	19	76	83
6	811217106006	Janani C	IV/ECE	27	90	19	76	83
7	811217106009	Karthick K	IV/ECE	30	100	20	80	90
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9	811217106011	Lakshmi M	IV/ECE	27	90	19	76	83
10	811217106012	Manikandan M	IV/ECE	27	90	19	76	83
11	811217106013	Mekala Devi S	IV/ECE	30	100	21	84	92

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12	811217106014	Pandimeena R	IV/ECE	27	90	20	80	85
13	811217106016	Preethi V	IV/ECE	30	100	21	84	92
14	811217106017	Raashitha Jannath A	IV/ECE	30	100	19	76	88
15	811217106018	Ranjitha T	IV/ECE	27	90	19	76	83
16	811217106019	Riyas Mohammed K	IV/ECE	24	80	20	80	80
17	811217106020	Saimouli N	IV/ECE	24	80	21	84	82
18	811217106021	Sarumathi A	IV/ECE	27	90	22	88	89
19	811217106022	Shalini M	IV/ECE	30	100	20	80	90
20	811217106023	Siva Sankari M	IV/ECE	27	90	21	84	87
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49	811219106010	Surya V	II/ECE	24	80	20	80	80

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51	811219106301	Yuvashree S	II/ECE	30	100	20	80	90
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VAC Coordinator

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CERTIFICATE OF PARTICIPATION

This is to certify that Ms. PREETHI.V, IV Year, ECE has successfully completed the Value Added Course on "PLC & INDUSTRIAL NETWORKING" organized by Department of Electronics and Engineering and IQAC of our Institution in Association with Hitakey Infosys from 02nd August 2021 to 06th August 2021 (5days) during the Academic year 2020-2021.

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Technical Head,
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