



AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
IAF-AVADI, CHENNAI - 55
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



CIRCULAR

AMSCE/EEE/CIR/VAC/002/2021-22

Date: 04.10.2021

The Department of Electrical and Electronics Engineering plans to conduct a Value Added Course on Arduino Programming by **S.Karthik, Electrical Design Engineer, M/s Techno Systems**, for the benefit of II Year students. This course is scheduled from 05.10.2021 to 29.10.2021 (**4:00 PM to 06:00 PM**) for 4 weeks (30 Hrs).

All the students must attend all the classes with a minimum of 75% attendance and score 50% on the quiz. Students who complete the course successfully will receive certificates.

Rajiv
04/10/21
HOD/EEE

Copy To:

Principal
IQAC

Circulate to all faculty members and Students
Department File



[Signature]
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Approved by AICTE & NAAC Accredited Institution




DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING
Organizing
VALUE ADDED COURSE ON
ARDUINO PROGRAMMING
for II Year EEE Students

Resource Person
Mr.S.Karthick
Electrical Design Engineer
Techno Systems

DATE :
05.10.2021 to
29.10.2021




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Er.M.S.Rajan,
Assistant Professor
Head/EEE

Dr.S.Sathish
Principal



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING



REPORT FOR THE VALUE ADDED COURSE ON ARDUINO PROGRAMMING

Course Name: ARDUINO PROGRAMMING

Resource Person : S.Karthik, Electrical Design Engineer, M/s Techno Systems

Date: 05.10.2021 to 29.10.2021

Time: 04.00 P.M to 06.00 P.M

Course Hours: 30 Hours

Attended Student: 16 Students

Student Certified: 16 Students

Course Overview: The 30-hour Arduino Programming course was designed to equip participants with fundamental and advanced skills in Arduino programming and hardware integration. The course combined theoretical knowledge with practical hands-on projects, promoting active learning and application of concepts.

Course Structure:

- **Duration:** 30 hours
- **Modules Covered:**
 1. Introduction to Arduino: Basics of microcontrollers, Arduino IDE setup, and programming fundamentals.
 2. Electronics Fundamentals: Understanding circuits, components, and schematic design.
 3. Programming Concepts: Variables, data types, control structures, and functions in C/C++.
 4. Sensor Integration: Working with various sensors (temperature, light, motion) and data collection.
 5. Actuator Control: Using motors and servos to create responsive systems.
 6. Project Development: Group projects to design and build functioning prototypes.
 7. Troubleshooting and Debugging: Techniques to identify and solve programming issues.

Learning Outcomes:

- Mastery of Arduino IDE and programming environment.
- Ability to design and implement basic electronic circuits.
- Proficiency in writing Arduino code to control hardware components.
- Hands-on experience in integrating sensors and actuators.
- Completion of a capstone project demonstrating learned skills.

Participant Feedback:

- Participants appreciated the balance of theory and practical application.
- High marks for instructor expertise and support during projects.


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- Suggestions for improvement included more advanced topics and extended project time.

Conclusion: The Arduino Programming course effectively met its objectives, enhancing participants' technical skills and confidence in working with Arduino technology. Future iterations may consider incorporating more advanced modules and additional project time to further enrich the learning experience.

[Handwritten Signature]
COURSE-COORDINATOR
29/10/24

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HOD/ELE
HEAD
Electrical & Electronics Engg.
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College of Engineering



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From

Mr. K.Rameez Raja
Assistant Professor,
Department of Electrical and Electronics Engineering,
Aalim Muhammed Salegh College of Engineering,
Muthapudupet, Avadi IAF,
Chennai – 600055.

To

The Principal,
Aalim Muhammed Salegh College of Engineering,
Muthapudupet, Avadi IAF,
Chennai – 600055.

Dear Sir,

Sub: Request for Approval of Value-Added Course: Arduino Programming - reg.

I am writing to request your approval for the value-added course titled "Arduino Programming" for II year EEE students from 05.10.2021 – 29.10.2021. I believe that the course will enhance the skills and competencies of our students. Given the growing interest and relevance of this subject, I believe that offering this course would greatly benefit our students' educational experience and equip them with valuable skills. Kindly consider the request and do the needful.

Yours faithfully,

K.Rameez Raja
27/9/2021

Submitted to the
Principal Sir

Sir, I request you to kindly
approve the said programme

Muzam
27/9/21

Permitted

Principal
27/9/2021



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS

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SYLLABUS FOR THE VALUE ADDED COURSE ARDUINO PROGRAMMING

MODULE I: Introduction to Arduino and Basic Programming

Overview of Arduino -Introduction to the Arduino platform and its components.

Understanding the Arduino IDE (Integrated Development Environment)- Basic Electronics Principles

Ohm's Law, voltage, current, and resistance - Reading simple schematics -Arduino Programming Basics

Introduction to programming in C/C++ for Arduino - Variables, data types, and basic syntax.

Writing your first program: Blinking an LED

MODULE II: Intermediate Programming Concepts and Sensor Integration

Control Structures - If-else statements, loops (for, while), and switch-case.

Working with Digital Inputs/Outputs -Reading button states and controlling LEDs.

Debouncing techniques for buttons -Introduction to Sensors -Connecting and using basic sensors like temperature, light, and motion sensors-Reading sensor data and displaying it on the Serial Monitor.

MODULE III: Advanced Sensor Applications and Actuators

Analog Inputs and Outputs -Using analog sensors and reading analog values-PWM (Pulse Width Modulation) for controlling brightness of LEDs - Working with Actuators -Introduction to motors (DC motors, servos)- Controlling motors using Arduino.

Project Work: Sensor Integration


Students will create a project that integrates multiple sensors and actuators.

MODULE IV : Final Projects and Presentation

Project Development - Students will work on their final projects incorporating learned concepts

Guidance on troubleshooting and refining projects - Project Presentations.


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SCHEDULE FOR THE VALUE ADDED COURSE ARDUINO PROGRAMMING

Time: 04.00 P.M to 06.00 P.M

WEEK 1 : 05.10.2021 to 08.10.2021

Introduction to Arduino and Basic Programming

Overview of Arduino (1 hour)

Introduction to the Arduino platform and its components.

Understanding the Arduino IDE (Integrated Development Environment).

Basic Electronics Principles (2 hours)

Ohm's Law, voltage, current, and resistance.

Reading simple schematics.

Arduino Programming Basics (4.5 hours)

Introduction to programming in C/C++ for Arduino.

Variables, data types, and basic syntax.

Writing your first program: Blinking an LED.

WEEK 2 : 11.10.2021 to 15.10.2021

Intermediate Programming Concepts and Sensor Integration

Control Structures (2 hours)

If-else statements, loops (for, while), and switch-case.

Working with Digital Inputs/Outputs (2 hours)

Reading button states and controlling LEDs.




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Debouncing techniques for buttons.

Introduction to Sensors (3.5 hours)

Connecting and using basic sensors like temperature, light, and motion sensors.

Reading sensor data and displaying it on the Serial Monitor.

WEEK 3 : 18.10.2021 to 22.10.2021

Advanced Sensor Applications and Actuators

Analog Inputs and Outputs (3 hours)

Using analog sensors and reading analog values.

PWM (Pulse Width Modulation) for controlling brightness of LEDs.

Working with Actuators (2 hours)

Introduction to motors (DC motors, servos).

Controlling motors using Arduino.

Project Work: Sensor Integration (2.5 hours)

Students will create a project that integrates multiple sensors and actuators.

WEEK 4 : 25.10.2021 to 29.10.2021

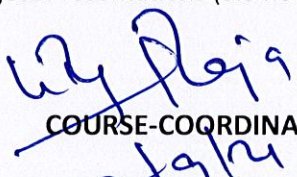
Final Projects and Presentation

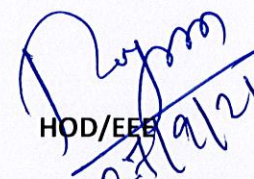
Project Development (4 hours)

Students will work on their final projects incorporating learned concepts.

Guidance on troubleshooting and refining projects.

Project Presentations (3.5 hours)


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27/9/21


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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
Certificate course on Arduino Programming
Academic year- 2021-2022

BATCH: 2019-2023

YEAR: IIIrd

S.No	Reg. no	NAME	5.10.21	6.10.21	7.10.21	8.10.21	11.10.21
1	110119105001	ABDUR RAHEEM M F	Rah	Rah	Rah	Rah	Rah
2	110119105002	ANNALAKSHMI P	Annalakshmi	Annalakshmi	Annalakshmi	Annalakshmi	Annalakshmi
3	110119105003	JAINULABDEEN ALMUBEEN AHAMED S	AHAMED	AHAMED	AHAMED	AHAMED	AHAMED
4	110119105004	MOHAMED ASKAR ASIF S	Askar	Askar	Askar	Askar	Askar
5	110119105006	MOHAMED FIRNAS M	Firnas	Firnas	Firnas	Firnas	Firnas
6	110119105007	MOHAMED HAMEED KAMSA K	Kamsa	Kamsa	Kamsa	Kamsa	Kamsa
7	110119105008	MOHAMED HUSSAIN K	Hussain	Hussain	Hussain	Hussain	Hussain
8	110119105009	MOHAMED RISWAN N	Riswan	Riswan	Riswan	Riswan	Riswan
9	110119105010	MOHAMED SALMAN T	Salman	Salman	Salman	Salman	Salman
10	110119105011	PACCHA GUNA SEK HAR	Gus	Gus	Gus	Gus	Gus
11	110119105012	SAIFUDEEN A	Saifudeen	Saifudeen	Saifudeen	Saifudeen	Saifudeen
12	110119105013	SAJID J	Sajid	Sajid	Sajid	Sajid	Sajid
13	110119105014	SALAHUDEEN S	Salahudeen	Salahudeen	Salahudeen	Salahudeen	Salahudeen
14	110119105015	TAHA NOORAIN	Taha	Taha	Taha	Taha	Taha
15	110119105301	MOHAMMED SHAKEEL B	Shakeel	Shakeel	Shakeel	Shakeel	Shakeel
16	110119105302	SYED MOHAMMED HAFEEZ M	SYED	SYED	SYED	SYED	SYED



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
 Certifate course on Arduino Programming
 Academic year- 2021-2022

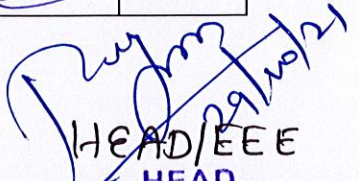
BATCH: 2019-2023

YEAR: III

S.No	Reg. no	NAME	13.10.21	15.10.21	18.10.21	20.10.21	21.10.21
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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
Certificate course on Arduino Programming
Academic year- 2021-2022

BATCH: 2019-2023

YEAR: III ✓

S.No	Reg. no	NAME	22.10.21	25.10.21	26.10.21	28.10.21	29.10.21
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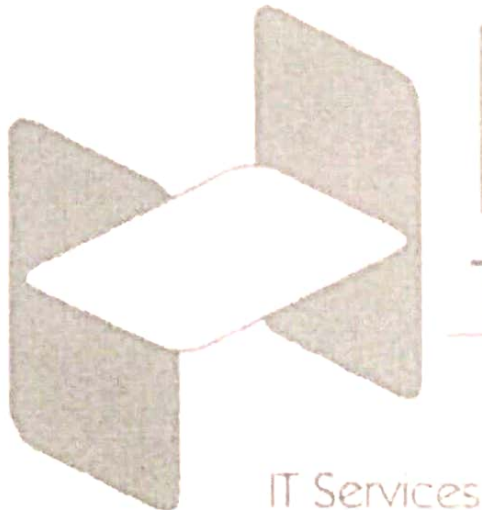
Mr.Kailas Menon
Manager,
HoistTechnologies



Date: 29.10.2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that of **KISHORE P. Aalim Muhammed Salegh College of Engineering, Avadi-IAF** has successfully completed “**ARDUINO PROGRAMMING**” Course conducted from 05.10.2021 to 29.10.2021



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Sincerely,

Nirav Narayanan,
HR - Team, Hoist Technologies



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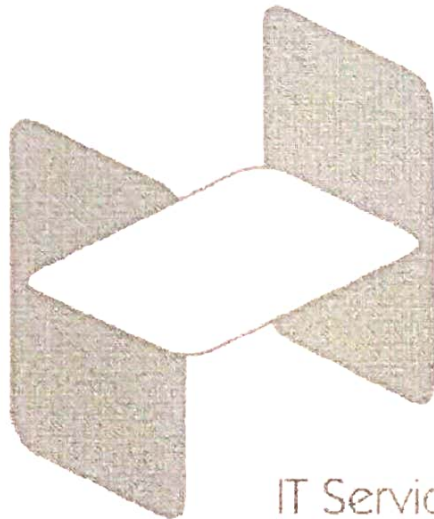
Mr.Kailas Menon
Manager,
HoistTechnologies



Date: 29.10.2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that of **MOHAMMED RILWAN L Aalim Muhammed Salegh** College of Engineering, Avadi-IAF has successfully completed “**ARDUINO PROGRAMMING**” Course conducted from 05.10.2021 to 29.10.2021



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IT Services

Sincerely,

Nirav

Nirav Narayanan,
HR - Team, Hoist Technologies

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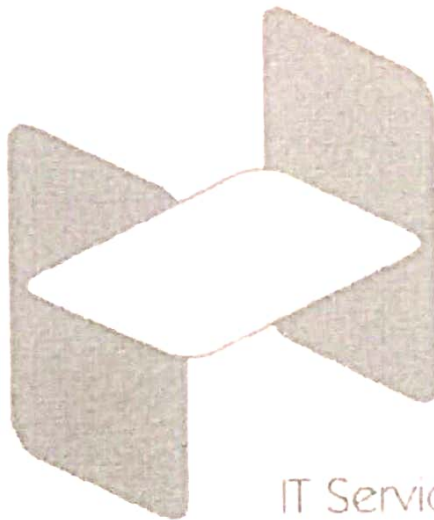
Mr.Kailas Menon
Manager,
HoistTechnologies



Date: 29.10.2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that of **GURURAJA** Aalim Muhammed Salegh College of Engineering, Avadi-IAF has successfully completed “**ARDUINO PROGRAMMING**” Course conducted from 05.10.2021 to 29.10.2021



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Sincerely,

Nirav

Nirav Narayanan,

HR - Team, Hoist Technologies



[Signature]
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COLLEGE OF ENGINEERING

Mr.Kailas Menon
Manager,
HoistTechnologies



Date: 29.10.2021

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This is to certify that of **MOHAMED SEIYAVUL IRFHAN** Aalim Muhammed Salegh College of Engineering, Avadi-IAF has successfully completed “**ARDUINO PROGRAMMING**” Course conducted from 05.10.2021 to 29.10.2021



Sincerely,

Nirav

Nirav Narayanan,
HR - Team, Hoist Technologies


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