

GOUR MAHAVIDYALAYA

Academic Council

ACCREDITED BY NAAC (2nd Cycle) B+

Dr. Supriya Biswas,
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Coordinator,
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Memo No. /GM/2024

Date: 22/03/2022

To
The Dept. of Physics, Gour Mahavidyalaya, Mangalbari Malda
Through
The principal, Gour Mahavidyalaya, Mangalbari Malda

Subject- Approval of Add-On Course for Department of Physics, Gour Mahavidyalaya

This is to inform you that your proposal for Add-On Course on "**Arduino-Uno-Basic**" with the students of Physics department during the period from 03/04/2022 to 28/05/2022 beyond class routine through on-line mode has been accepted by Academic Council. You are requested to make necessary arrangements to run this course.

Thanking you,

Yours Sincerely,

Dr. Supriya Biswas,
Associate Professor,
Coordinator,
Gour Mahavidyalaya, Malda

GOUR MAHAVIDYALAYA

ACCREDITED BY NAAC (2nd Cycle) B+

Dr Anirban Ray,
Assistant Professor
anirban.chaos@gmail.com



P.O.- Mangalbari, Dist. : Malda. Pin – 732142 (W.B.)
Phone : 9733144274

Website : www.gourmaha.org

Memo No. /GM/2024

Date: 03/03/2022

To
The principal, Gour Mahavidyalaya, Mangalbari Malda
Through
The Coordinator, Academic Council, Gour Mahavidyalaya, Malda

Subject- Approval of Add-On Course for Department of Physics, Gour Mahavidyalaya

Sir

This is to inform you that the department of Physics is going to conduct Add-On Course on "**Arduino-Uno-Basic**" with the students of Physics department during the period from 03/04/2022 to 28/05/2022 beyond our class routine through n-line mode. The course duration is 30 (thirty).

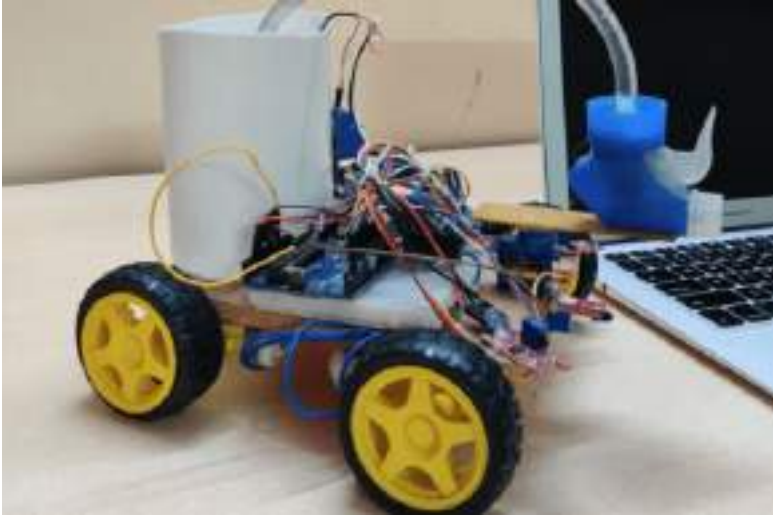
I therefore request you to approve my proposal so that we can start above mentioned Add-On Course with the students of our department as early as possible.

Thanking you

Name of the Teachers

1. Dr. DolonChampa Saha, Associate Professor, Prabhu Jagat Bandhu College, Howrha, WB
2. Dr. Anirban Ray, Assistant Professor, GourMahavidyalaya

Dr. Anirban Ray
Assistant Professor
Department of Physics
Gour Mahavidyalaya, Malda



ARDUINO-UNO BASIC

Add-On Course

ABSTRACT

This 30-hour add-on course covers Arduino Uno microcontrollers and gives hands-on experience. Students will learn to programme and use Arduino Uno in electronics and IoT projects. Participants will study basic electronics, Arduino IDE programming, sensor interfacing, motor control, communication protocols, and project execution in lectures and workshops. Project-based learning improves creativity, problem-solving, and cooperation. Students will be comfortable utilising Arduino Uno to prototype and develop electronic solutions after the course.

Gour Mahavidyalaya
Add-On Course

Chapter	Sessions	Classes
1. Basic	Getting started with Arduino. Introduction to Arduino Setup your computer to use Arduino. Understanding electronics elements Resistors, capacitors, transistors, relays etc.	4Hrs
2. LEDs.	Blinking of LEDs Fading of LED. Circling of LEDs. (FOR loop) Blinking of EVEN and ODD states of LEDs. LED dice. Traffic light system. And many more projects	4Hrs
3. Serial monitoring.	Controlling of LEDs from your computer. Reading analog and digital inputs.	2Hrs
4. Digital inputs	Controlling LED using push button. Switching ON a relay.	2Hrs
5. Analog inputs.	Controlling of LEDs using a joystick. Controlling a DC motor, PWM. Changing the brightness of LEDs using potentiometers.	2Hrs
6. LCD displays	Wiring of LCD screen with Arduino. Displaying a message in LCD screen. Screen navigation on LCD. Turn ON a LED by entering the password. Knowing the status of the LED. Scrolling of text. Displaying room temperature using LM 35 temperature sensor.	6Hrs

Total Course Hrs.	30Hrs
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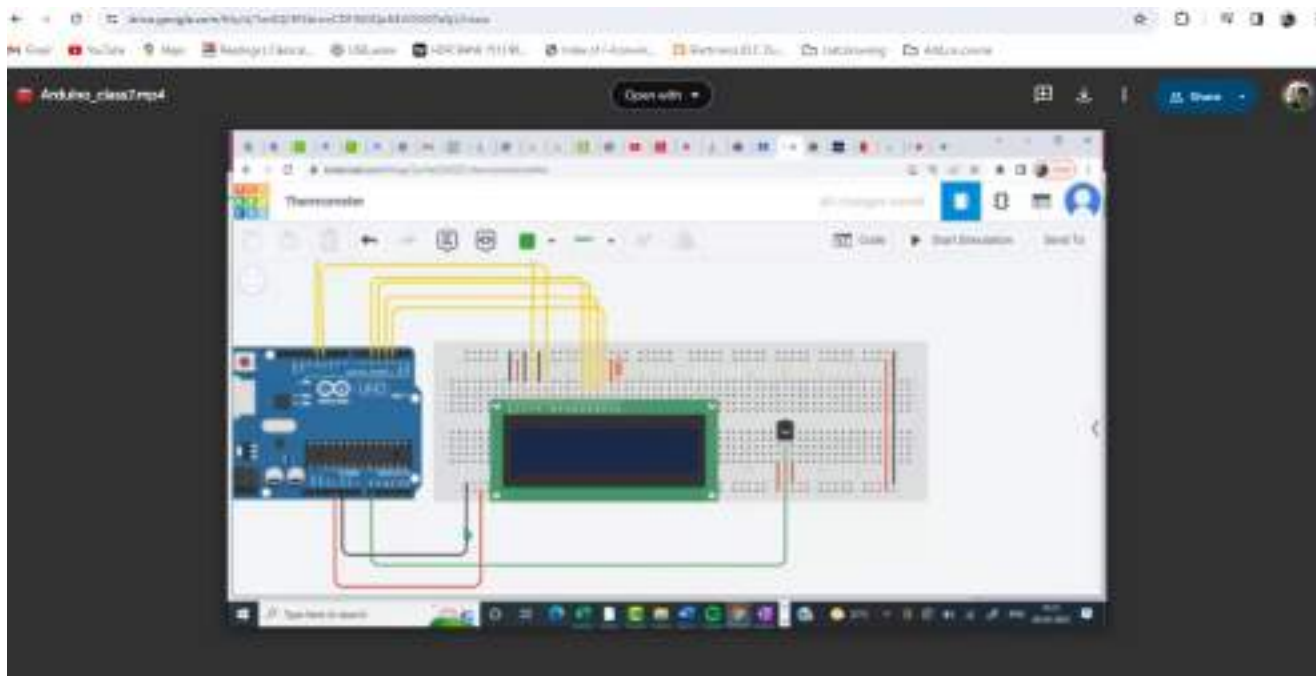
LIVE Projects Covered

- LED Blinking
- Running LEDs
- Decoration LEDs/LED Patterns Etc.
- Sensor Interfacing IR-Sensors
- Digital Thermometer
- Digital Voltmeter(Bellow 5Volt &Above 5 Volt)
- Seven Segment Display

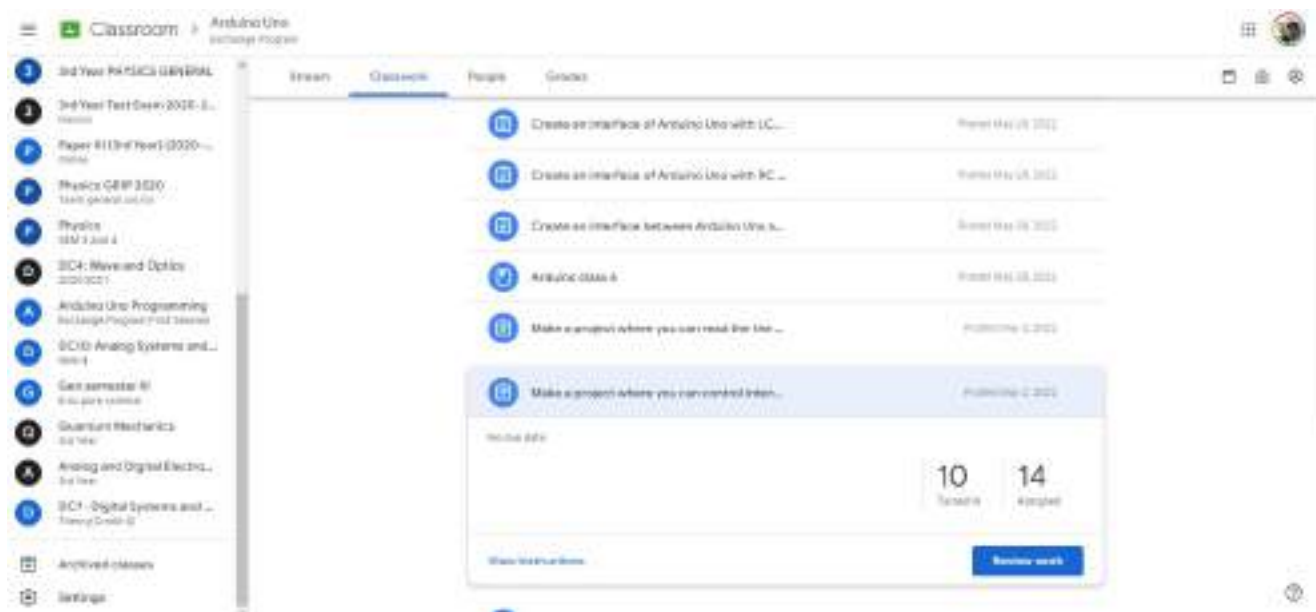
Requirement:

- A Windows, Mac or Linux computer
- An Arduino Uno
- Electronics parts like resistors, LEDs, sensors, as listed in Section 1 of the course
- Essential tools: a mini breadboard, jumper wires, a multimeter, a soldering iron and solder, wire cutter
- Be excited about electronics!

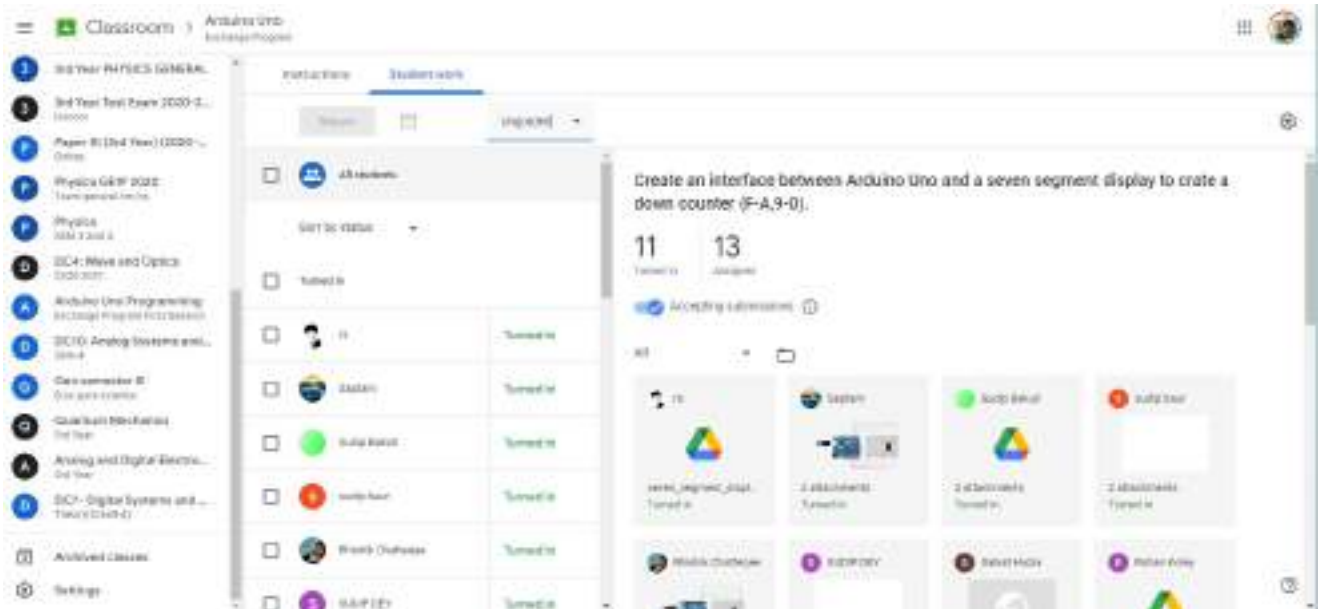
Snippet of the online class:



Snippet of materials provided in the classroom including class video:



Projects Submitted by Students:



The screenshot displays a Google Classroom interface for a class named "Arduino Uno" by teacher "EstherMogee". The left sidebar lists various physics topics, including "3rd Year PHYSICS GENERAL", "3rd Year Test Exam 2020-21", "Paper 81 (3rd Year) (2020-21)", "Physics GEM 2021", "Physics 3rd Year 3", "3C4: Wave and Optics", "Arduino Uno Programming", "3C10: Analog Systems and...", "Gas compression II", "Qualian Mechanics", "Acing and Digital Electri...", and "3C7- Digital Systems and...". The main content area is titled "Student work" and shows a project assignment with the instruction: "Create an interface between Arduino Uno and a seven segment display to crate a down counter (F-A,9-0)". The assignment shows two student submissions: "Yamen 11" and "Aljagani 13", both marked as "Submitted". Below the submissions, there is a grid of icons for various Google services like Drive, Photos, Maps, and YouTube.

Link to Google Class-Room: <https://classroom.google.com/c/NDkzOTY4NzYxNTgz>

GOUR MAHAVIDYALAYA

REACCREDITED BY NAAC (2nd Cycle) B+

Dr. Ashim Kumar Sarkar, M.A., M. Phil., Ph.D
Principal.
principalgourcollege@gmail.com



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Certificate of Appreciation

The purpose of this document is to certify that Dr. Dolan Champa Saha, an associate professor in the department of physics at Prabhu Jagatbandhu College in Howrah, West Bengal, has successfully delivered a thirty-hour course on "Arduino-Uno-Basic" through the medium of online instruction between the dates of March 4, 2022 and May 28, 2022.

Ashim Kumar Sarkar
(Dr. A. K. Sarkar)
Principal
Gour Mahavidyalaya
Mangalbari, Malda

CERTIFICATE OF COMPLETION

This is presented to :

Ratna Paul

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Nikita Kunar Paul

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Pratik Das

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Ritam Das

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

RS Barman

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Samim Akhtar

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Sneha Karmakar

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Soumyadip Talukdar

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Soumyajit Sarkar

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

Sudip Mallik

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator

CERTIFICATE OF COMPLETION

This is presented to :

ABHIJIT ROY

completed a 30 Hrs Add-On Course in Arduino-Uno



DR. ASHIM KR. SARKAR

Principal, Gour
Mahavidyalaya



DR. ANIRBAN RAY

Coordinator