To
The Board of Studies,
S.D.Mahila Mahavidyalya,
Narwana.

Sub: Approval for "ARDUINO" Certificate course..

Respected Madam,

We want to start a certified offline course "ARDUINO"(30 Hours) in our campus. A Certificate is an education goal for many students who want to improve their visibility among aggressive job applications. Certificates may help to provide students with increased skills and experience. Syllabus of "ARDUINO" is attached with this application. Please kindly approve this certified course. We shall be thankful to you for this.

Enclosed: Syllabus of the Certificate Course.

Yours Faithfully

Officiating Principal
S·D· Mahila Mahavidyalya
NARWANA

Ms.Nisha
Asstt. Prof. of Physics

Skill oriented certificate course
Topic- Arduino
SYLLABUS

1. Introduction

1.1. Installation of Arduino
1.2 Basic in Arduino (UNO)
* PIN Configuration
• PIN Function

2. Arduino Working

3. Basic Arduino Programming

3.1 Program structure & Rules
3.2 Using Variables
3.3 Writing First Boguam
3.4 Serial Monitor
3.5 Numeric Data types
3.6 Tent data type
3.7 Array data Type
3.8 Digital Input/Output
3.9 Analog Input/Output
3.10 If ELSE IF statement
3.11 For Loop

4. LED Blink Program

5. MQ3 Alcohol Sensor Interfacing With Arduino Uno

6. Servo Motor Interfacing with Arduino Uno

7. How to use IR sensor with Arduino Uno

8. LCD with Arduino Uno.

Officiating Principal
S·D. Mahila Mahavidyalyo
NARWANA

Skill Oriented Certificate Course Paper Pattern
Topic- Arduino
Theory

Time - 1:00 hour

M.M-20

Note:- Paper Setter will set 5 question in all. Question No. 1 Comprising of 4 short types Questions carrying 1 Marks each is compulsory. It Covers the entire syllabus. Candidate is required to attempt all questions carrying 4 marks each.

"Practicals"

Time- 1:00 hour

MM-20

Note-Do any one experiment (Program) from the five (Program)

* The Practical examination will be held in a Single Session of 1 hour.

Distribution of Marks:

Experiments- 15 marks

Viva Voice- 05 marks

Total- 20 marks

Officiating Principal
S·D. Mahila Mahavidyalyo
NARWANA

Ms. Nisha
Asst. Prof. of Physics

Ms. Mahak
Asst. Prof. of Physics

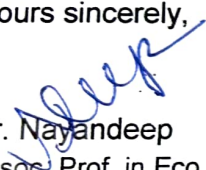Subject: Approval for **"ARDUINO"** by the Board of Studies
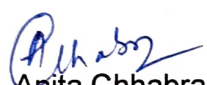
Dear Ms. Nisha & Mahak,

I am pleased to inform you that after careful consideration and review by the Board of Studies, has approved **"ARDUINO"** which spans over 30+ hours of instruction.
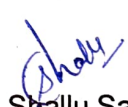
This course has been evaluated thoroughly to ensure its alignment with our institution's academic standards and objectives. We believe that it will significantly contribute to the academic enrichment of our students and align with our commitment to providing high-quality education.

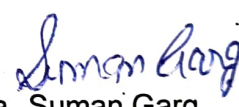Thank you for your interest and support in our academic endeavors.

Yours sincerely,

Dr. Nayandeep	Dr. Anita Chhabra	Dr. Shallu Sachdeva	Suman Garg	Nisha
Assoc. Prof. in Eco.	Asst. Prof. in Hindi	Asst. Prof. in Hist.	Asst. Prof. in Eng.	Asst. Prof. in Physics
Convener	Member	Member	Member	Member

Principal
S.D. Mahila Mahavidyalya
Narwana

S D MAHILA MAHAVIDYALYA
NARWANA-126116 (JIND) HARYANA

Dated:- 28.09.22

<u>Notice</u>

बी एस सी फाइनल ईयर की सभी छात्राओं को सूचित किया जाता है कि 01 ऑक्टूबर 2022 से महाविद्यालय में ARDUINO पर 30 घंटे का सर्टिफिकेट कोर्स करवाया जाएगा और कोर्स के अंत में परीक्षा ली जाएगी और छात्राओं को प्रमाण पत्र दिए जाएंगे।

Officiating Principal
S·D. Mahila Mahavidyalya
NARWANA

S.D MAHILA MAHAVIDYALAYA NARWANA

DEPARTMENT OF SCIENCE

PROUDLY OFFERS

ADD ON CERTIFICATE COURSE IN

ARDUINO

STARTING FROM 1ST OCTOBER 2022

DURATION - 30 HOURS

MODE- OFFLINE

- Understanding the basics of ArduinoOverview of Arduino boards and components
- Basics of electronic components: resistors, capacitors, LEDs, etc
- Interfacing with sensors: light, temperature, motion, etc.
- Advanced Arduino Projects

MS. NISHA
CONVENOR

MS. MAHAK
CO-CONVENOR

DR. ANJANA LOHAN
PRINCIPAL

Participant Attendance Sheet :- B.Sc. III rd

from 01/10/2022 to 19/11/2022

Session 2022-2023 (Oct. to Nov.)

Sr.No.	Name	Roll No.	01	03	04	06	07	08	10	11	13	14	15	17	18	19	20	21	27	28	29	31	04	07	11	12	14	15	16	17	18	19	Total	Signature
1	Gurpreet	12019101/001	P	P	P	P	P	P	P	P		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	27	Gurpreet
2	Ravina	1201910/5c01	P		P		P	P		P	P	P	P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	26	Ravina
3	Preeti	02	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	27	Preeti
4	Jyoti	03	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	27	Jyoti
5	Sakeena	05	P		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	27	Sakeena
6	Nisha Rani	06	P	P	P		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	28	Nisha
7	Ankita Kumari	07	P	P	P	P	P		P	P	P	P	P	P	P	P		P	P		P	P	P	P	P	P	P	P	P	P	P	P	28	Ankita
8	Sumita	08	P	P		P	P	P		P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P		P	P	P	26	Sumita
9	Anjali	09	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	27	Anjali
10	Ansh	10		P	P	P	P		P		P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	26	Ansh
11	Pooja	12	P	P	P	P		P		P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	27	Pooja
12	Balvinder	13	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	27	Balvinder
13	Diksha	14		P	P	P	P		P	P	P	P		P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	25	Diksha
14	Pinku	15	P	P	P		P	P	P	P		P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	26	Pinku
15	Khushi	16		P	P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	27	Khushi
16	Priya	17	P		P	P	P		P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P		P	P	P	25	Priya
17	Muskan	18	P	P		P		P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	26	Muskan
18	Amandeep	19	P	P	P		P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	26	Aman
19	Anju	21	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	26	Anju
20	Vandana	22	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	27	Vandana
21	Tamanna	23	P	P	P		P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	26	Tamanna

Officiating Principal
S.D. Mahila Mahavidyalyo
NARWANA

Skill oriented certificate course
TOPIC- ARDUINO
Question Paper Theory

MM-20   Time-1 hour

Question 1 have 4 question carrying 1 marks each. Another 5 questions have four marks. All
Candidates are required to attempt any four question from 2 to 6.

1 (a) What are the 28 pins on Arduino?
(b) Why is it called Arduino?
(c) Which language is used in Arduino?
(d) Who is the developer of Arduino?   1x4= 4

Q2. Draw and explain the circuit diagram af Arduino board?

Q3. What are the three main parts of Arduino program?

Q4. What are some key components of an Arduino Project?

Q5. How can you create an LED blink program for Arduino?

Q6. How can you create a servo Motor program for Arduino?   4x4=16

Officiating Principal
S·D. Mahila Mahavidyalyo
NARWANA

S.D. MAHILA MAHAVIDYALYA, NARWANA

Session - 2022-23

Roll No. 120191011010. Class B.Sc. Final. Sec. .... Subject. Physics.

Date................................

Signature....Alish..............

$\frac{16}{20}$ — Nisha

Q1 (a)

Ans => There are a total of 28 pins. There are 14 digital pins including Transmission and receiver pins. There are 6 analog pins, 3 ground pins and 1 Analog Reference pin, 1 Reset pin, 1 reset pin, 1 vin pin, 15 v pin, 1 3.3V pin.

(b)

Ans => Arduino :-

The name Arduino comes from a bar in Iverea, Italy, where some of the project's founders used to meet. It was named after Arduin of Ivrea, who was the margrave of the March of Ivrea. He was the king of Italy from 1002 to 1014.

Officiating Principal
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NARWANA

(c)

Ans => Arduino uses a variant of the C++ programming language.

(d)

Ans => A brief History. In 2005, building upon the work of Hern Hernando Barragan, Massimo Banzi and David Cuartielles created Arduino.

20/20 Nisha

Que 1 (a)

Ans => There are 14 digital pins including RX and TX pins. There are 3 ground pins, 6 analog pins, 1 Reset pin, 1 3.3 V pin and 1 5 V pin and 1 Analog reference (AREF) pin. Thus, there are total 28 pins.

Que 1 (b)

Ans => The name Aurdino comes from a bar in Ivrea, Italy where some of the project's founder used to meet. The bar was named Aurdino of Ivrig who are the margreva of the march of Ivrea and king of Italy from 1002 to 1014.

Que 1 (c)

Ans => Arduino uses a variant of the C++ programming language.

Que 1 (d)

Ans 1 (d) Massimo Banzi and David Caurtielles is known as the developer of arduino.

Result of Certificate Course

Class – B.Sc IIIrd Year
Session – 2022-2023
Topic – Arduino

S.No.	Roll No.	Name	Theory (20)	Practical (20)	Total (40)
1	120910111001	Gurpreet	17	15	32
2	1201910150001	Ravina	20	17	37
3	1201910150002	Preeti	14	19	33
4	1201910150003	Jyoti	17	20	37
5	1201910150005	Sakeena	15	15	30
6	1201910150006	Nisha Rani	15	17	32
7	1201910150007	Ankita	19	18	37
8	1201910150008	Sumita	14	17	31
9	1201910150009	Anjali	17	18	35
10	1201910150010	Alish	16	18	34
11	1201910150012	Pooja	14	17	31
12	1201910150013	Balwinder	15	15	30
13	1201910150014	Diksha	19	12	31
14	1201910150015	Pintu	16	14	30
15	1201910150016	Khushi	13	19	31
16	1201910150017	Briya	19	13	32
17	1201910150018	Muskan	17	18	35
18	1201910150019	Amandeep	15	19	34
19	1201910150021	Anju	18	15	33
20	1201910150022	Vandana	14	16	30
21	1201910150023	Tamanna	17	15	32

Present
Absent 0
Total 21

Officiating Principal
S.D. Mahila Mahavidyalya
NARWANA

Overview

Skill Oriented Course on ARDUINO

Session:- 2022-23

The Certificate Course on ARDUINO Offered by the Department of Physics, Mrs. Nisha S.D.MM.V Narwana has conducted from 01. October 2022 to 19 November, 2022 with a batch of 21 students and 21 Students sucessfully completed the course. The students gain basic knowledge of ARDUINO programming. During this certificate Course Mrs Nisha and Mahak gave the mechanical skill like how to use alcohol sensor with Arduino UNO, how to use IR sensor with Arduino, how to use servo motor witb Arduino etc. Principal Dr Anjana Lohan, Dr Nayandeep, Dr Shalu Sachdeva Neha, Seema, Yashika were present at this event.

Learning Outcomes

* Gain knowledge of Arduino (UNO)

* Installation af Arduino

* Basic knowledge of Arduino programming

* To use MQ3 alcohol sensor with Arduino Uno

* To Use IR Sensor with Arduino Uno

* To use Servo motor with Arduino UNO

- Develop mechanical skill

Officiating Principal
S.D. Mahila Mahavidyalaya
N A R W A N A

All students Successfully completed this Course. By gaining knowledge of this course, they develop their technical skills by making antisleep alarm and Radar. They also become self independent & will start their own start up in future to make earning on their own.

S D Mahila Mahavidyalya, Narwana
Student Feedback Performa

Name	Preeti		
Class	B.Sc III %d		
Roll Number	120191015002		
Email Address			
Session	2022-2023		
Phone No.			

	Excellent	Very Good	Good	Average
The content was easy to understand.		✓		
It was well organised.	✓			
It engaged the participants in learning.			✓	
The Teacher was able to explain the activity.				
The level of communication of teacher with students	✓		✓	
The event made progress in accomplishing its goal.			✓	
I found this event experience to be worthwhile.				✓

Suggesion

महाविद्यालय द्वारा प्रदान किया गया यह कोर्स अत्यंत लाभदायक रहा। इससे हम चीज़ों को बाहर से खरीदने की बजाय खुद ही बना सकते हैं। अतः समय अनुसार ये कोर्स चलते रहने चाहिए।

Officiating Principal
S.D. Mahila Mahavidyalyo
NARWANA
Signature

Date

S D Mahila Mahavidyalya, Narwana
Student Feedback Performa

Name	Ankita
Class	B.Sc III rd
Roll Number	120191011 5007
Email Address	
Session	2022-2023
Phone No.	

	Excellent	Very Good	Good	Average
The content was easy to understand.	✓			
It was well organised.		✓		.
It engaged the participants in learning.		✓		
The Teacher was able to explain the activity.	✓			
The level of communication of teacher with students			✓	
The event made progress in accomplishing its goal.		✓		
I found this event experience to be worthwhile.	✓			

Suggesion

जो courses महाविद्यालय में आयोजित किए गए थे उनसे हमें New ideas मिले जिन्हें हम अपने भविष्य के कार्यो में Apply कर सकते है । ऐसे courses होते रहने चाहिए ।

Ankita
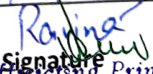
Date

Of Signature Principal
S·D. Mahila Mahavidyalyo
NARWANA

S D Mahila Mahavidyalya, Narwana
Student Feedback Performa

Name	Ravina
Class	B.Sc IIIrd
Roll Number	12019105001
Email Address	
Session	2022-2023
Phone No.	

	Excellent	Very Good	Good	Average
The content was easy to understand.		✓		
It was well organised.	✓			
It engaged the participants in learning.			✓	
The Teacher was able to explain the activity.	✓			
The level of communication of teacher with students		✓		
The event made progress in accomplishing its goal.			✓	
I found this event experience to be worthwhile.	✓			

Suggesion

सभी courses, जो आयोजित किए गए थे उनसे हमे बहुत कुछ सीखने को मिला। आशा करते है कि महाविद्यालय आगे मे इन courses को आयोजित करने में अग्रसर हो।

Ravina

Signature

Officiating Principal
S.D. Mahila Mahavidyalya
NARWANA

Date

S D Mahila Mahavidyalya, Narwana
Student Feedback Performa

Name	Pinku
Class	B.Sc III rd
Roll Number	12019101101015
Email Address	
Session	2022-2023
Phone No.	

	Excellent	Very Good	Good	Average
The content was easy to understand.		✓		
It was well organised.			✓	
It engaged the participants in learning.	✓			
The Teacher was able to explain the activity.				✓
The level of communication of teacher with students	✓			
The event made progress in accomplishing its goal.		✓		
I found this event experience to be worthwhile.			✓	

Suggesion

महाविद्यालय में आयोजित किए गए सभी courses अत्यंत प्रेरणादायक थे। इससे हमें बहुत कुछ सीखने को मिला जो भविष्य में काम आएंगे। आशा करते हैं भविष्य में भी ऐसे courses हो।

Officiating Principal
Signature
S D. Mahila Mahavidyaly
NARWANA

Date

S.D. MAHILA MAHAVIDYALYA

NARWANA (JIND)   :

(AFFILIATED TO CH. RANBIR SINGH UNIVERSITY, JIND)

Certificate of Participation

This is to certify that Miss **MUSKAN** of **Class B.Sc. III** Participated in **ARDUINO**

Certificate Course (Session 2022-23) Course for a duration of 30 hours organized in

College Campus by Science Department.

Officiating Principal
S.D. Mahila Mahavidyalyo
NARWANA

Convener   Co-Convener   :   Principal

S.D. MAHILA MAHAVIDYALYA

NARWANA (JIND)

(AFFILIATED TO CH. RANBIR SINGH UNIVERSITY, JIND)

Certificate of Participation

This is to certify that Miss **DIKSHA** of **Class B.Sc. III** Participated in **ARDUINO Certificate Course (Session 2022-23)** Course for a duration of 30 hours organized in College Campus by Science Department.

Convener

Co-Convener

Officiating Principal
S.D. Mahila Mahavidyalya
NARWANA

Principal

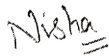# S.D. MAHILA MAHAVIDYALYA

NARWANA (JIND)

(AFFILIATED TO CH. RANBIR SINGH UNIVERSITY, JIND)

Certificate of Participation

This is to certify that Miss **SUMITA** of Class **B.Sc. III** Participated in **ARDUINO Certificate Course (Session 2022-23)** Course for a duration of 30 hours organized in College Campus by Science Department.

Nisha

Co-Convener

Officiating Principal
S.D. Mahila Mahavidyalya
NARWANA

Principal

Convener

S.D. MAHILA MAHAVIDYALYA

NARWANA (JIND)

(AFFILIATED TO CH. RANBIR SINGH UNIVERSITY, JIND)

Certificate of Participation

This is to certify that Miss **PREETI** of **Class B.Sc. III** Participated in **ARDUINO Certificate Course (Session 2022-23)** Course for a duration of 30 hours organized in College Campus by Science Department.

Officiating Principal
S.D. Mahila Mahavidyalya
NARWANA

Convener

Co-Convener

Principal