

# Markanda National College

Ladwa Road Shahabad Markanda



## Value Added Course

Session: 2021-22

<b>Title</b>	:	<b>Basics of Experimental Skills in Physics</b>
<b>Code</b>	:	<b>BP21</b>
<b>Certification</b>	:	<b>Grading Pattern</b>
<b>Duration</b>	:	<b>30 Hours</b>
<b>Mode of Assessment</b>	:	<b>Pen and Paper</b>
<b>Offered By</b>	:	<b>Department of Physics, Markanda National College Shahabad</b>

Course Coordinator: Dr. Jawahar Lal

Principal  
Markanda National College  
Shahabad Markanda (Haryana)

Date: 5-10-2021

To

The Principal  
M N College  
Shahabad

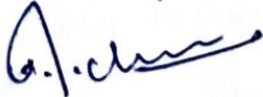
**Subject: Regarding Approval of Value Added Certificate Course**

Sir,

1. I would like to say that the Department of Physics want to offer a Value Added Certificate Course title "*Basics of experimental skills in physics*" for the students of B.Sc.-I Year in the session 2021-22. The duration of the course is minimum 30 contact hours which will comprise 60 % Theory classes and 40% Practical classes in a blended mode. In this course department will organize 1-2 extension lecture(s) in addition to regular classes. The details of the course are attached herewith for your ready reference. Kindly approve the same so that the course can be started timely.

Thanks and Regards,

Yours sincerely,



**Dr. Jawahar Lal**

**Course Coordinator and HOD Physics**



**Dr, Amit Kumar**

**Course Co-Coordinator**

Allowed



**Principal  
Markanda National College  
Shahabad Markanda (Haryana)**

To

The Principal  
M.N. college,  
Shahabad (M)

Subject - Request to remit the VAC in Physics registration fee.

Sir,

As per notice circulated for students on 5-10-21, and with your kind permission, the Dept of Physics is going to start Value added certificate BOPPS Course for B.Sc. I year students titled "Basics of Experimental skills in Physics". Students were asked to submit registration fee Rs 100/- but students requested to ~~to~~ remit the fee. We also humbly request you to remit the registration fee of students and allow us to conduct the Course without fee for the academic benefit of students.

Dated 6/10/21  
*This course may be given free of cost to the students as the teachers are also not claiming any remuneration for the same.*  
With Regards  
*Ash Kumar*

*Ash Kumar*  
Dr. Jawaharlal  
Asst. Prof. of Physics  
*Ash Kumar*  
Dr. Amit Kumar  
Asst. Prof. of Physics

## **COURSE OBJECTIVES**

The objective of this course is to make the students skilled in conducting experiments and making observations outside the curriculum designed in core subject. The students are exposed with some measuring, electronic and optical devices used in practicals at UG and higher levels.

## **COURSE OUTCOMES**

CO1: Students can understand the use and handling of basic measuring equipments.

CO2: Students are able to produce small circuits and can understand their functions.

CO3: Students are able to understand the working of measuring devices.

CO4: Students become aware of working skill for their future prospects.



**SYLLABUS**  
**BASICS OF EXPERIMENTAL SKILLS IN PHYSICS**  
**VAC-2021-22**

**Course Code: BP21**

**Minimum Lecture: 30 (Theory-15, Practical -15, Each: 1 Hrs.)**

**Theory Marks: 50**

*Note: Examination paper will be consisting of eight questions. Students are required to attempt any four questions in total by selecting one question from each unit. The circuit or block diagrams should be neat & clean. All questions will carry equal marks.*

**Unit-I**

**Theory and working of Measurement Devices**

**(8 Lectures)**

Vernier Calipers, Screw Gauge, Spectrometer, Stop watch, Voltmeter, Ammeter, Galvanometer

**Unit-II**

**Optical Sources and Electronic Circuits**

**(10 Lectures)**

Sodium Lamp, Mercury Lamp, Laser light, Use of LED in remote area/traffic light, Bugler Alarm, Rain Alarm, Sensors, Rectifier.

**Unit-III**

**Theory of Electric/Electronic Devices**

**(12 Lectures)**

Color coding of carbon resistors, Rheostat, Resistance box, Electrical vibrator, Electromagnet, P-N junction diode, three configuration of transistor (C-E, C-B, C-C), Solar cell, Photodiode, Amplifiers, Theory of oscillators.



## Practical

*Students have to perform all experiments and will prepare a proper record of the each experiment. At the end of course each student individually or in group will be assigned a small physics project which have to in the form of a report of 3-4 pages individually.*

1. To calculate the least count of some measuring devices(Vernier Calipers, Screw Gauge, Spherometer, Voltmeter, Ammeter etc.
2. To perform soldering iron.
3. To convert a galvanometer into ammeter or voltmeter of given range
4. To study the setting of spectrometer.
5. To prepare a water level indicator circuit.
6. To calculate the resistance values of carbon resistors by color coding.



## Scheme

S. No	Particular	Marks
1	Theory	50
2	Practical	50

The final certificate of completion will be awarded in grade point system given below.

S. No	Percentage of Marks	Grade
1	85 % and above	A+
2	75 % to 84 %	A
3	65 % to 74 %	B
4	55 % to 64 %	C
5	40 % to 54 %	D
6	Below 40 %	No Grade

Approved by:



IQAC Coordinator

(Dr. Jawahar Lal)



Course Co-Coordinator

(Dr. Amit Kumar)



**Principal**  
**Markanda National College**  
**Shahabad Markanda (Haryana)**

Convener, Value Added Course Course Coordinator & HOD physics

(Dr. Ajay Kumar Arora)




IQAC Member

(Sh. Suresh Kumar)



(Dr. Jawahar Lal)



Student's Representative

(Priti)



© 01744-240152

# MARKANDA NATIONAL COLLEGE

Shahabad Markanda - 136135 (Kurukshetra)

Ref. No.

Date..05-10-2021

## Notice

All the students of Science Department are informed that Department of Physics of the college is going to start a Value Added 30 Hrs. Certificate Course titled "**Basics of Experimental Skills in Physics**" w.e.f. Oct. 15, 2021 for session 2021-22 to enhance the practical skills of the students. The course is mandatory for B.Sc. first year student's .However B.sc. 2<sup>nd</sup> and 3rd year Students can opt., if they so desire .The classes will be conducted in blended mode that is online and offline as per the syllabus of the course. The schedule of classes is as given below.

S.R.NO.	Class	Time
1	B.Sc. I,II,III	2:40 pm to 3:40 pm (Friday and Saturday of every week )

Incharges

Dr.Jawahar Lal

Dr.Amit Kumar



Principal

Principal  
Markanda National College  
Shahabad Markanda (Haryana)





© 01744-240152

# MARKANDA NATIONAL COLLEGE

Shahabad Markanda - 136135 (Kurukshetra)

Ref. No.



Date 21-05-2022

## Notice

All the student of B.Sc. I year enrolled in 30 Hrs. Certificate Course titled **Basics of Experimental Skills in Physics** conducted by Department of Physics during session 2021-22 are informed that their theory and practical certificate course exam will be held on 27-05-2022 in the Physics lab as per the schedule given below.

Sr.No.	Exam	Marks
1	Theory 9:30 am to 12:30pm Practical 1:00pm to 4:00 pm	50 marks 50 marks

Incharges

Dr. Jawahar Lal Dr. Amit Kumar 

Principal

Principal  
Markanda National College  
Shahabad Markanda (Haryana)

# Markanda National College Shahabad Markanda

## Department of Physics

### Attendance Chart

Value Added Certificate Course

### Basics of Experimental Skills in Physics

Session: 2021 -22

Class: B.Sc-I

S. No	Name	Roll No	15/9/21	16/9/21	20/9/21	23/9/21	28/9/21	12/10/21	13/10/21	13/10/21	29/10/21	29/10/21	30/10/21	31/10/21	29/11/21	06/11/21	27/11/21	17/12/21	07/12/21	24/12/21	24/12/21	31/12/21	01/01/22	14/01/22	15/01/22	21/01/22	22/01/22	28/01/22	29/01/22	15/02/22	14/02/22	Total	
1	Priti	1212112015002	P	P	P	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	23	
2	Neelaskshi	1212112015004	P	P	P	P	A	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	20
3	Lakshita	1212112015007	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	P	19
4	Jatin	1212112015009	A	P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	14
5	Manvi	1212112015010	P	P	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
6	Gurjot	1212112015011	P	P	P	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	18
7	Ankit Rai	1212112015012	A	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	20
8	Twinkle	1212112015014	A	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	18
9	Mohit Kumar	1212112015015	A	P	P	A	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	13
10	Abhijeet	1212112015016	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	P	20



*Principal*  
*Shahabad Markanda*

*G. S. Sharma*

*Principal*

Principal  
 Markanda National College  
 Shahabad Markanda (Haryana)

# Markanda National College Shahabad Markanda

## Department of Physics

### Attendance Chart

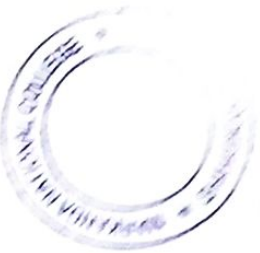
#### Value Added Certificate Course

#### Basics of Experimental Skills in Physics

Session: 2021-22

Class: R.Sc-1

S. No	Name	Roll No	22	23	24	25	26	27	28	29	30	Total	Grand Total		
1	Prithi	1212112015002	P	P	P	P	A	P	P	P	P	07+09	07		
2	Nayabkhatun	1212112015004	P	P	A	P	P	P	P	P	P	07+19	06		
3	Lakshmi	1212112015007	A	P	P	P	P	P	P	P	P	07+19	06		
4	Parvati	1212112015009	A	P	P	A	P	P	P	P	P	04+19	18		
5	Narvani	1212112015010	P	A	P	P	P	P	P	P	P	08+18	08		
6	Chaitani	1212112015011	P	P	P	P	P	P	P	P	P	07+20	07		
7	Anjali Khatun	1212112015012	P	P	P	P	P	P	P	P	P	08+20	08		
8	Ivadhika	1212112015014	P	P	P	P	P	P	P	P	P	08+18	08		
9	Mohini Kumari	1212112015015	P	P	P	P	P	P	P	P	P	06+18	06		
10	Abhishek	1212112015016	P	P	P	P	P	P	P	P	P	08+20	08		



*Ashwini*  
Principal  
Markanda National College  
Shahabad, Markanda (Haryana)

*D. J. Singh*

# Markanda National College, Shahabad Markanda

Name of Activity: Value Added Course

Exam: Theory

Date: 27-05-2022

Time: 09:30 AM to 12:30PM

Date of Start: 15-10-2021

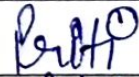
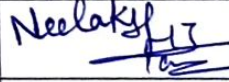

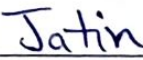

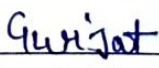
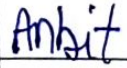


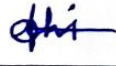
Session: 2021-22

Prof Incharges: Dr. Jawahar Lal & Dr. Amit Kumar

Venue: Physics Lab. & Seminar Room

Topic: Basics of Experimental Physics in Physics

## ATTEDANCE CHART

Sr. No.	Name	Class	Roll No.	Signature
1	Priti	B.Sc. I	1212112015002	
2	Neelakshi	- do -	1212112015004	
3	Lakshita	- do -	1212112015007	
4	Jatin	- do -	1212112015009	
5	Manvi	- do -	1212112015010	
6	Gurjot	- do -	1212112015011	
7	Ankit Rai	- do -	1212112015012	
8	Twinkle	- do -	1212112015014	
9	Mohit Kumar	- do -	1212112015015	
10	Abhijeet	- do -	1212112015016	





# Markanda National College, Shahabad Markanda

Name of Activity: Value Added Course

Exam: Practical

Date: 27-05-2022

Time: 1:00 PM to 4:00PM

Date of Start: 15-10-2021

Session:2021-22

Prof Incharges: Dr. Jawahar Lal & Dr. Amit Kumar

Venue: Physics Lab. & Seminar Room

Topic:Basics of Experimental Physics in Physics

## ATTEDANCE CHART

Sr. No.	Name	Class	Roll No.	Signature
1	Prati	B.sc -I	1212112015002	Prati
2	Neelakshi	- do -	1212112015004	Neelakshi
3	Lakshita	- do -	1212112015007	Lakshita
4	Jatin	- do -	1212112015009	Jatin
5	Manvi	- do -	1212112015010	Manvi
6	Gurjot	- do -	1212112015011	Gurjot
7	Ankit Rai	- do -	1212112015012	Ankit
8	Twinkle	- do -	1212112015014	Twinkle
9	Mohit Kumar	- do -	1212112015015	Mohitkumar
10	Abhijeet	- do -	1212112015016	Abhi



*J. Ch...*  
*A. Kumar*

# Markanda National College, Shahabad Markanda

Name of Activity: Value Added Course

Session: 2021-22

Prof Incharges: Dr. Jawahar Lal & Dr. Amit Kumar

Topic: Basics of Experimental Physics in Physics

## DEPARTMENT OF PHYSICS

### DETAILED MARKS CARD

B.Sc.I

Sr. No.	Name	Roll No.	Max. Marks		Marks Obtained		Total Marks	Grade
			Theory	Practical	Theory	Practical		
1	Preeti	1212112015002	50	50	46	43	89	A <sup>+</sup>
2	Neelakshi	1212112015004	50	50	40	42	82	A
3	Lakshita	1212112015007	50	50	35	40	75	A
4	Jatin	1212112015009	50	50	15	20	35	Not qualified
5	Mansi	1212112015010	50	50	38	40	78	A
6	Gurjot	1212112015011	50	50	30	37	67	B
7	Ankit Rai	1212112015012	50	50	38	40	78	A
8	Twinkle	1212112015014	50	50	32	38	70	B
9	Mohit Kumar	1212112015015	50	50	12	18	30	Not qualified
10	Abhijeet	1212112015016	50	50	28	30	58	C



Principal  
Markanda National College  
Shahabad Markanda (Haryana)

*(Signature)*  
*(Signature)*



# MARKANDA NATIONAL COLLEGE

SHAHABAD MARKANDA, DIST. KURUKSHETRA, HARYANA (INDIA)

(Affiliated to Kurukshetra University, Kurukshetra)

<https://mnscs.ac.in>

email: [mncshahabad@yahoo.co.in](mailto:mncshahabad@yahoo.co.in)

Ph: +91-01744-240152

Sr. No. 02

Dated: 03/06/2022

## CERTIFICATE

This is to certify that Mr./Miss Neelakshi

§/D/O Sh. Kanwarjeet

has completed the value Added Certificate course titled

Basics of Experimental Skills in Physics

conducted by Department of Physics

from 15-10-2021 to 20-5-2022 for 30 hours.

He/She secured grade 'A'.

G. Chaur

Course Coordinator



Ashu Kumar

Principal Signature & Seal

Principal  
Markanda National College  
Shahabad Markanda (Haryana)

Marks Percentage  
Grade

85% above  
A+

75-84%  
A

65-74%  
B

50-64%  
C

40-50%  
D



# MARKANDA NATIONAL COLLEGE

SHAHABAD MARKANDA, DIST. KURUKSHETRA, HARYANA (INDIA)

(Affiliated to Kurukshetra University, Kurukshetra)

<https://mncs.ac.in>

email:mncshahabad@yahoo.co.in

Ph: +91-01766-280152

Sr. No. 01

Dated: 03/06/2022

## CERTIFICATE

This is to certify that Mr./Miss Priti

S/D/O Sh. Gurmej

has completed the value Added Certificate course titled

Basics of Experimental skills in Physics

conducted by Department of Physics

from 15-10-2021 to 20-5-22 for 30 hours.

He/She secured grade 'A+'.

Course Coordinator

Principal Signature & Seal

Principal  
Markanda National College  
Shahabad Markanda (Haryana)



Marks Percentage  
Grade

85% above  
A+

75-84%  
A

65-74%  
B

55-64%  
C

40-54%  
D





# MARKANDA NATIONAL COLLEGE

SHAHABAD MARKANDA, DIST. KURUKSHETRA, HARYANA (INDIA)

(Affiliated to Kurukshetra University, Kurukshetra)

<https://mnscs.ac.in>

email: [mncshahabad@yahoo.co.in](mailto:mncshahabad@yahoo.co.in)

Ph: +91-01744-240152

Sr. No. 08

Dated: 03/06/2022

## CERTIFICATE

This is to certify that Mr./Miss Twinkle

S/O Sh. Satish Kumar

has completed the value Added Certificate course titled

Basics of experimental skills in physics

conducted by Department of physics

from 15-10-2021 to 20-05-2022 for 30 hours.

He/She secured grade 'B'.

Course Coordinator

Principal Signature & Seal

Principal  
Markanda National College  
Shahabad Markanda (Haryana)



Marks Percentage  
Grade

85% above  
A+

75-84%  
A

65-74%  
B

50-64%  
C

40-50%  
D