

Markanda National College Shahabad Markanda

Ladwa Road Shahabad



Value Added Course

Session -2022-23

Title : Instrumentation: Theory and Practice
Code : CI22

Certification : Grading Pattern

Duration : 30 Hours

Mode of : Pen and Paper

Assessment

Offered By : Department of Physics
Markanda National College Shahabad
Markanda

Course Coordinator: Dr. Jawahar Lal

Principal
Markanda National College
Shahabad Markanda (Haryana)

Markanda National College Shahabad Markanda

Ladwa Road Shahabad

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	50% to 64 %	C
5	40% to 50 %	D
6	Below 40%	No Grade

Date: 15.Sept. 2022

To

The Principal
M N College
Shahabad

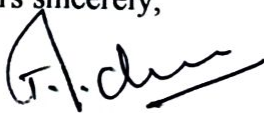
Subject: Regarding Approval of Value Added Course

Sir,

I would like to say that the department of physics want to offer a Value Added Course title "**Instrumentation: Theory and Practice**" for the students of B.Sc.-II and III Years in the session 2022-23. The duration of the course is one semester which will comprise of 60 % Theory classes and 40% practical classes and a minimum 30 contact hours in 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,

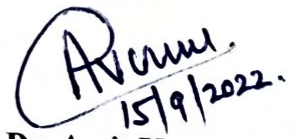
Yours sincerely,



Dr. Jawahar Lal

HOD Physics

For the Advisory Committee
Ashok Kumar
16.9.22



Dr. Amit Kumar

Course Coordinator



Markanda National College, Shahabad Markanda

Value Added Course

B.Sc-II and III Years

(Session: 2022-23)

Instrumentation: Theory and Practice

Duration: One Semester 30 Hours (Minimum)

Offered by:

Department of Physics

Markanda National College, Shahabad, Markanda

COURSE OBJECTIVES

The objective of this course is to make the students skilled in instrumentation and experiment outside the curriculum designed in core subject. The students are exposed with some nuclear electronic devices used for measurement of levels of radioactive gases present in environment.

COURSE OUTCOMES

CO1: Students can understand the use of basic electronic components and small circuits

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

CO3: Students are able to understand the background nuclear radiation

CO4: Students become aware of working/handling of radon detectors and measurement of radioactive gases in environment.

CO5: Students become aware of Environmental Pollution due to Hazard Nuclear Radiation.

Instrumentation: Theory and Practice

Minimum Lecture: 45 (Theory-25, Practical -20, Each: 45 min.)

Theory Marks: 50

Practical: 50

Total Marks: 100

Pass Mark: 40

Note: Examination paper will be consisting of eight questions. Students are required to attempt any four questions at all. All questions are compulsory. The circuit or block diagrams should be clean. All questions will carry equal marks.

Unit-I Measurement Devices and Instruments

(6 Lectures)

Resistors, Capacitors, Inductor, Transistor, Ammeter, Voltmeter, Galvanometer, Micrometer, Rectifier, Vernier Calipers, Screw Gauge, Spectrometer, Stop watch. Dosimeter, Nuclear Radiation Detectors, Counters

Unit-II Optical Sources, Nuclear Detectors and Electronic Circuits

(6 Lectures)

Sodium Lamp, Mercury Lamp, Laser light, Use of LED in remote area/traffic light, Bugler Alarm, Rain Alarm, Sensor. Scintillation Radon Monitor, Scintillation Thoron Monitor.

Unit-III Background Radiation

(6 Lectures)

Radiation, Ionizing and Non Ionizing Radiation, Source of Radiation, Effect of radiation on human, Environmental Radiation, Radon and its isotopes, Properties, Effect on Human Health, Positive and Negative aspects of radon.

Unit-IV Radiation measurement devices

(7 Lectures)

Radiation Detectors, Gamma Survey Meter, Global Positioning System, Scintillation radon Monitor, Scintillation Thoron Monitor-Principle and Measurements Methods. Radon and Thoron Exhalation Rates. SSNTDs and its applications.

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 identify the active and passive electronic components.
2. To perform soldering iron
3. To convert a galvanometer into ammeter or voltmeter of given range
4. To prepare AC to DC converter circuits
5. To prepare a water level indicator circuit.
6. To measure gamma radiation in Environment
7. To determine radon and thoron level in environments
8. To determine radon and thoron gas exhaled from building materials and soil
9. To prepare series and parallel circuits with resistors and capacitors.

Scheme

S. No	Particular	Marks
1	Theory	50
2	Practical Records	25
3	Project report and prototype	10+15

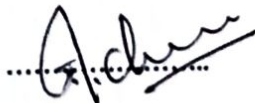
The final certificate of completion will be awarded in grade point system given below.

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:

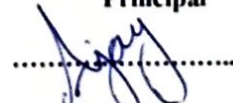


Principal
Markanda National College
Shahabad Markanda (Haryana)
Principal



IQAC Coordinator

(Dr. Jawahar Lal)



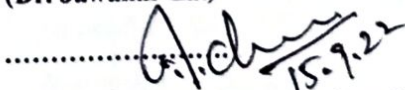
Convener, Value Added Course

(Dr. Ajay Kumar Arora)



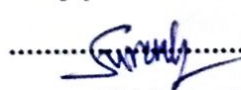
Course Coordinator

(Dr. Amit Kumar)



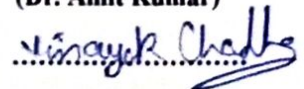
HOD Physics & Course Co-Coordinator

(Dr. Jawahar Lal)



IQAC Member

(Sh. Suresh Kumar)



Student's Representative

(Vinayak Chadha)



MARKANDA NATIONAL COLLEGE

Shahabad Markanda - 136135 (Kurukshetra)

Ref. No.

Date 08-02-2023

Notice

All the students of Science Department are informed that the Department of Physics of the college is going to start a Value Added 30 Hrs Certificate Course titled “**Instrumentation-Theory and Practice**” w.e.f. Feb 13, 2023 for session 2022-23 to enhance the practical skills of the students. The course is mandatory for B.Sc. final year students. However B.Sc. 2nd 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. III	2:30 pm to 3:15 pm (Friday and Saturday of every week) Sunday 10:00 am to 11:30 am(online)

Incharges

Dr. Jawahar Lal

Dr. Amit Kumar

Ashok Kumar
Principal



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MARKANDA NATIONAL COLLEGE

Shahabad Markanda - 136135 (Kurukshetra)

Ref. No.

Date...14-06-23

Notice

All the students of B.Sc . III year enrolled in 30 Hrs Certificate Course titled “Instrumentation-Theory and Practice” conducted by Department of Physics during session 2022-23 are informed that their theory and practical certificate course exam will be held on 19-06-23 in physics lab as per the schedule given below.

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

Incharges

Dr. Jawahar Lal

Dr. Amit Kumar

Ashwini Kumar
Principal

Markanda National College Shahabad Markanda

Department of Physics

Detailed Marks Card


Value Added Certificate Course

Instrumentation: Theory and Practice

Session: 2022-23

Class: B.Sc-III

S. No	Name	Roll No.	Maximum Marks		Marks Obtained		Total Marks
			Theory	Practical	Theory	Practical	
1	Gurjot Singh	120211015001	50	50	32	37	69
2	Vinayak Chadda	120211015002	50	50	36	40	76
3	Mahak	120211015003	50	50	34	38	72
4	Akshit Punia	120211015004	50	50	38	42	80
5	Lovika Rani	120211015005	50	50	35	40	75
6	Muskan Devi	120211015007	50	50	32	38	70
7	Keshav	120211015008	50	50	30	37	67
8	Nikhil Dhiman	120211015011	50	50	37	41	78
9	Sahil	120211015012	50	50	40	43	83
10	Keshav Saini	120211015013	50	50	38	40	78
11	Kamal Sharma	120211015014	50	50	32	36	68
12	Sarita	120211015015	50	50	38	39	77
13	Milan Kumar	120211015016	50	50	34	36	70
14	Ankush	120211015017	50	50	39	40	79
15	Vandana	120211015018	50	50	38	42	80
16	Anjali	120211015019	50	50	36	36	72
17	Vishal	120211015020	50	50	38	40	78
18	Harshit	120211015021	50	50	35	36	71
19	Priyanka	120211015022	50	50	40	40	80
20	Amit	120211015023	50	50	38	40	78



Dr. Jawahar Lal
Course Coordinator



Dr. Amit Kumar
Course Co-Coordinator



Dr. Ashok Kumar
Principal
Markanda National College
Shahabad Markanda (Haryana)

Markanda National College Shahabad Markanda

Department of Physics

Attendance Chart

Value Added Certificate Course

Instrumentation: Theory and Practice

Session: 2022-23

Class: B.Sc-III

S. No	Name	Roll No	17/1/23	18/1/23	19/1/23	20/1/23	21/1/23	22/1/23	23/1/23	24/1/23	25/1/23	26/1/23	27/1/23	28/1/23	29/1/23	30/1/23	31/1/23	1/2/23	2/2/23	3/2/23	4/2/23	5/2/23	6/2/23	7/2/23	8/2/23	9/2/23	10/2/23	11/2/23	12/2/23	13/2/23	14/2/23	15/2/23	16/2/23	17/2/23	18/2/23	19/2/23	20/2/23			
1	Gurjot Singh	120211015001	P	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	
2	Vinayak Chadda	120211015002	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	P	P	P	P	P	P	P	
3	Mahak	120211015003	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	P	P	P	P	P	P	P	P
4	Akshir Punia	120211015004	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	P	P	P	P	P	P	P	P
5	Lovika Rami	120211015005	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	P	P	P	P	P	P	P	P
6	Muskan Devi	120211015007	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	P	P	P	P	P	P	P	P
7	Keshav	120211015008	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	P	P	P	P	P	P	P	P
8	Nikhil Dhiman	120211015011	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	P	P	P	P	P	P	P	P
9	Sahil	120211015012	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	P	P	P	P	P	P	P	P
10	Keshav Saini	120211015013	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	P	P	P	P	P	P	P	P
11	Kamal Sharma	120211015014	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	P	P	P	P	P	P	P	P
12	Sarita	120211015015	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	P	P	P	P	P	P	P	P
13	Milan Kumar	120211015016	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	P	P	P	P	P	P	P	P
14	Ankush	120211015017	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	P	P	P	P	P	P	P	P
15	Vandana	120211015018	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	P	P	P	P	P	P	P	P
16	Anjali	120211015019	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	P	P	P	P	P	P	P	P
17	Vishal	120211015020	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	P	P	P	P	P	P	P	P
18	Harshit	120211015021	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	P	P	P	P	P	P	P	P
19	Priyanka	120211015022	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	P	P	P	P	P	P	P	P
20	Armit	120211015023	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	P	P	P	P	P	P	P	P

A. Ch...

P. V...

MARKANDA NATIONAL COLLEGE, SHAHABAD(M)

Name of Activity:

Value Aided Course

Date of Start:

13-Feb-23

Session: 2022-23

Prof. Incharges

Dr. Jawahar Lal & Dr. Amit Kumar

Place:

Physics Lab. & Seminar Room

Topic:

Instrumentation --- Theory and Practice

Exam: Theory

19-06-2023

9:30 AM to 12:30 PM

S.NO.	Name	CLASS	ROLL NO.	Signature
1	Gurjot Singh	B.Sc. III	120211015001	Gurjot
2	Vinayak Chada	- do -	15002	Vinayak
3	Mahak	- do -	15003	Mahak
4	AKshit Punia	- do -	15004	Akshit Punia
5	Lovika Rani	- do -	15005	Lovika Rani
6	Muskan Devi	- do -	15007	Muskan
7	Keshav	- do -	15008	Keshav
8	Nikhil Dhiman	- do -	15011	Nikhil Dhiman
9	Sahil	- do -	15012	Sahil
10	Keshav Saini	- do -	15013	Keshav Saini
11	Kamal Sharma	- do -	15014	Sarita Kaur
12	Sarita	- do -	15015	Sarita
13	Milan Kumar	- do -	15016	Milan Kumar
14	Ankush	- do -	15017	Ankush
15	Vandana	- do -	15018	Vandana
16	Anjali	- do -	15019	Anjali
17	Vishal	- do -	15020	Vishal
18	Harshit	- do -	15021	Harshit
19	Priyanka	- do -	15022	Priyanka
20	Amit	- do -	120211015023	Amit
21				

Amit G. D.

MARKANDA NATIONAL COLLEGE, SHAHABAD(M)

Name of Activity: Value Aided Course
Date of Start: 13-Feb-23 Session: 2022-23
Prof. Incharges: Dr. Jawahar Lal & Dr. Amit Kumar
Place: Physics Lab. & Seminar Room
Topic: Instrumentation --- Theory and Practice

Exam: Practical
19-06-2023
1.00 PM to 4 PM

S.NO.	Name	CLASS	ROLL NO.	Signature
1	Gurjot Singh	B.Sc-III	120211015001	Gurjot
2	Vinayak chada	- do -	15002	Vinayak
3	Mahak	- do -	15003	Mahak
4	Akshit Punia	- do -	15004	Akshit Punia
5	Lovika Rani	- do -	15005	Lovika Rani
6	Muskan Devi	- do -	15007	Muskan
7	Keshav	- do -	15008	Keshav
8	Nikhil Dhiman	- do -	15011	Nikhil Dhiman
9	Sahil	- do -	15012	Sahil
10	Keshav Saini	- do -	15013	Keshav Saini
11	Kamal Sharma	- do -	15014	Kamal
12	Sagita	- do -	15015	Sagita
13	Milan Kumar	- do -	15016	Milan Kumar
14	Ankush	- do -	15017	Ankush
15	Vandana	- do -	15018	Vandana
16	Anjali	- do -	15019	Anjali
17	Vishal	- do -	15020	Vishal
18	Harshit	- do -	15021	Harshit
19	Priyanka	- do -	15022	Priyanka
20	Amit	- do -	120211015023	Amit
21				

Amit
G. Chaudhary

RECEIPT SUMMARY FOR
ACCOUNTHEAD INSTRUMENTATION: THEORY AND

ADMISSION NO	NAME	CLASS	AMOUNT
120211015001	GURJOT SINGH	B. SC. III (Boys)	100
120211015002	VINAYAK	B. SC. III (BOYS)	100
120211015003	MAHAK	B. Sc. III (Girls)	100
120211015004	AKSHIT PUNIA	B. SC. III (Boys)	100
120211015005	LOVIKA RANI	B. SC. III	100
120211015007	MUSKAN DEVI	B. Sc. III (Girls)	100
120211015008	KESHAV	B. SC. III (BOYS)	100
120211015011	NIKHIL DHIMAN	B. SC. III (Boys)	100
120211015012	SAHIL	B. SC. III (BOYS)	100
120211015013	KESHAV SAINI	B. SC. III (Boys)	100
120211015014	KAMAL	B. SC. III (Boys)	100
120211015015	SARITA	B. SC. III	100
120211015016	MILAN KUMAR	B. SC. III (Boys)	100
120211015017	ANKUSH	B. SC. III (Boys)	100
120211015018	VANDNA	B. SC. III	100
120211015019	ANJALI	B. SC. III	100
120211015020	VISHAL	B. SC. III (Boys)	100
120211015021	HARSHIT	B. SC. III (Boys)	100
120211015022	PRIYANKA	B. SC. III	100
120211015023	AMIT	B. SC. III (Boys)	100
TOTAL AMOUNT			2000
Total No_of Records		20	

Total Students = 20
enrolled

G. Ch

Amount Received
2000/- *G. Ch*

Compulsory for B.sc. III Students
 Course Name - Instrumentation - Theory & Practice
 . Session - 2022-23

Markanda National College Shahabad, Markanda

Ladwa Road, Shahabad-136135

Registration Form

Please fill the following particulars

1. Name :
2. Father's Name :
3. Class :
4. Roll No :
5. Session :

6. Name of the Value Added Course in which student seeks to admit: **Instrumentation:**

Theory and Practice

7. Results in previous university examination.....

8. Registration Fee : Rs. 100/-

Declaration:

I certify that, I have understood the minimum requirements for completion of this Value added course in respect of attendance, practical work and project work. If I fail then no certificate will be awarded. I am joining this course as I feel that it will add practical knowledge in addition to my regular Programme curriculum.

Date.....

Applicant's Signature

Paste your recent
Photograph



MARKANDA NATIONAL COLLEGE

SHAHABAD MARKANDA, DIST. KURUKSHETRA, HARYANA (INDIA)

(Affiliated to Kurukshetra University, Kurukshetra)

<https://mncs.ac.in>

email:mncshahabad@yahoo.co.in

Ph: +91-01744-240152

Sr. No. 01

Dated: 28/06/2023

CERTIFICATE

This is to certify that Mr./Miss Gurjot Singh

S/D/O Sh. Harneik Singh

has completed the value Added Certificate course titled

Instrumentation : Theory and Practice

conducted by Department of Physics

from Feb.13,2023 to May20,23 for 30 hours.

He/She secured grade 'B'

Course Coordinator

Principal Signature & Seal

Markanda National College
Shahabad Markanda (Haryana)

Marks Percentage	85% above	75-84%	65-74%	50-64%	40-50%
Grade	A+	A	B	C	D



MARKANDA NATIONAL COLLEGE

SHAHABAD MARKANDA, DIST. KURUKSHETRA, HARYANA (INDIA)

(Affiliated to Kurukshetra University, Kurukshetra)

<https://mnsc.ac.in>

email: mncshahabad@yahoo.co.in

Ph: +91-01744-240152

Sr. No. 02

Dated: 28 / 06 / 2023

CERTIFICATE

This is to certify that Mr./Miss Vinayak Chadha

S/P/O Sh. Narinder Kumar

has completed the value Added Certificate course titled

Instrumentation : Theory and Practice

conducted by Department of Physics

from Feb. 13, 2023 to May 20, 2023 for 30 hours.

He/She secured grade 'A'.

A. Ch...

Course Coordinator

Ashu Kumar

Principal Signature & Seal

Markanda National College
Shahabad Markanda (Haryana)

Marks Percentage Grade	85% above A+	75-84% A	65-74% B	50-64% C	40-50% D
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