Markanda National College Shahabad Markanda

Ladwa Road Shahabad



Value Added Course

Session -2022-23

Tittle

: 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

Markanda National College U. ahabad 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%	В
4	50% to 64 %	C
5	40% to 50 %	D
6	Below 40%	No Grade

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

Gon the Advirey Committee 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 Radiations

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 %	В
4	55 % to 64 %	С
5	40 % to 54 %	D
6	Below 40 %	No Grade

Approved	by:
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Principal Principal

Markanda National College Shakabad Markanda (Haryana)

Principal

IQAC Coordinator

Convener, Value Added Course

Course Coordinator

(Dr. Jawahar Lal)

(Dr. Ajay Kumar Arora)

(Dr. Amit Kumar)

HOD Physics & Course Co-Coordinator

IQAC Member

Student's Representative

(Dr. Jawahar Lal)

(Sh. Suresh Kumar)

(Vinayak Chadha)

© 01744-240152



MARKANDA NATIONAL COLLEGE

Shahabad Markanda - 136135 (Kurukshetra)

Ref. No.

Date 08-02-202

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
an V	•	11:30 am(online)

Incharges

Dr. Jawahar Lal

Website: www.mncs.ac.in Fax No.: 01744-245173, E-mail: mncshahabad@yahoo.co.in





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 "Instrumentation-Theory Practice" and titled Course 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	50 marks
	9:30 am to 12:30 pm	
	Practical	50 marks
	1:00 pm to4:00 pm	

Incharges

Dr. Jawahar Lal G. Dr. Amit Kumar

Dr. Amit Kumar/

Website: www.mncs.ac.in Fax No.: 01744-245173, E-mail: mncshahabad@yahoo.co.in

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.	Maximu	m Marks	Marks C	btained	Total
			Theory	Practical	Theory	Practical	Marks
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

Markanda Mational College

Shahabad Markanda (Haryana)

Markanda National College Shahabad Markanda Department of Physics

Attendance Chart

Value Added Certificate Course

Instrumentation: Theory and Practice

Class: B.Sc-III

Session: 2022-23

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Markanda National College Shahabad Markanda Department of Physics

Attendance Chart

Value Added Certificate Course

Instrumentation: Theory and Practice

Class: B.Sc-III

Session: 2022-23

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1202				Anjali	Vandana	Ankush	Milan Kumar	Sarita	Kamal Sharma	Keshav Saini	Sahil	Nikhil Dhiman	Keshav	Muskan Devi	Lovika Rani	Akshit Punia	Mahak	Vinayak Chadda	Gurjot Singh	Name
120211015023	120211015022	120211015021	120211015020	120211015019	120211015018	120211015017	120211015016	120211015015	120211015014	120211015013	120211015012	120211015011	120211015008	120211015007	120211015005	120211015004	120211015003	120211015002	120211015001	Roll No
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MARKANDA NATIONAL COLLEGE, SHAHABAD(M)

Name of Activity:

Value Aided Course

Date of Start:

13-Feb-23

Session: 2022-23 Dr. Jawahar Lal & Dr. Amit Kumar

Prof. Incharges Place:

Physics Lab. & Seminar Room

19-06-2023

9:30Am to 12.30 PM

Topic: Instrumentation --- Theory and Practice

0.00	Topic:	Instrumentation		
S.NO.	Name	CLASS	ROLL NO.	Signature
1	Guzjot Singh	B.Sc.TIL	120211015001	Courjet
2	Vinayak chada	-do-	15002	01
3	Mahak	- do -	15003	Mahret
4	Akshit Punia	-do-	15004	Akahit Punja
5	Loyika Rani	_do-	15005	Lovike Pani
6	Musican Devi	- do -	15007	Muskey
7	Ke8hgV	_do_	15008	Keshay.
8	Nikhil Dhiman	- do -	15011	Nikly Diman.
9	Saluil	_ do -	15012	Sahil
10	Kexhav Saini	-do-	15013	Keshandaini
11	Kamal Sharma	_do-	ISoly	Sarata Kanf
12	Sarita	- do-	15015	Sarita
13	Milan Kumar	- do -	15016	nilae kuner
14	Ankush	_ do -	15017	11,
15	Vandana	_ do_	15018	Nandra
16	Anjali	_ do -	15019	
17	Vishal	_ do _	15020	Whal
18	Harshit	_ do _	15021	Marshit
19	Priyanka	_ do _	15029	Priyanka
20	Amit	_ do-	1202110 15023	Amit
21				

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MARKANDA NATIONAL COLLEGE, SHAHABAD(M)

Name of Activity:

Value Aided Course

Date of Start:

13-Feb-23 Session: 2022-23

Prof. Incharges Place:

Dr. Jawahar Lal & Dr. Amit Kumar

Physics Lab. & Seminar Room

Exam: Practical

19-06-2023

1.00 pm to 4 PM

Topic: Instrumentation --- Theory and Practice

1 Guzjot Singh B.Sc. III 120211015001 Captry 2 Vinayak Chada - do - 15002 Mahak 3 Mahak - clo - 15003 Mahak 4 Akshit Punia - do - 15004 Akshirt 5 Levika Rani - do - 15005 Louika I 6 Muskan Devi - do - 15007 Nudur 7 Keshav - do - 15008 Kushan 8 Nikhil Dhiman - do - 15011 Nikhil S 9 Sahil - do - 15012 Sahil 10 Keshav Saini - do - 15013 Kushan 11 Kamal Sharma - do - 15013 Kushan 12 Sagita - do - 15015 Savita 13 Milan Kumay - do - 15016 Nikhil 14 Ankush - do - 15017 Ankash 15 Vandana - do - 15018 Vandra 16 Anjali		Signature	ROLL NO.	CLASS	Name	S.NO.
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17 Vishal _ alb _ 15020 Vijha)	. UI ^	15020	-do-		
		Harshit	15021	- do-		
19 Priyanka - do - 15022 Priyanka		Prigantas	15022	_do-		evol-
20 Amit -do- 12021/0/5023 Amit		Amit	12021/0/5023	_do-	,	
21	٠		7			100.00

MARKANDA NATIONAL COLLEGE, SHAHABAD(M)

RECEIPT SUMMARY FOR

ACCOUNTHEAD

INSTRUMENTATION: THEORY AND

DMISSION 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		B. SC. III (Boys)	100
120211016014		B. SC. III (Boys)	100
120211015015		B. SC. III	100
120211015016		B. SC. III (Boys)	100
120211015017		B. SC. III (Boys)	100
120211015018		B. SC. III	100
120211015019		B. SC. III	100
120211015020		B. SC. III (Boys)	100
120211015021		B. SC. III (Boys)	100
12021101502	2 PRIYANKA	B. SC. III	100
12021101502	3 AMIT	B. SC. III (Boys)	100
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Total No.	of Records	20	

Total Students = 20 energled Among Rece Among Commission. 6. d.

Compulsory for B. Sc. III Students

Course Name - Instrumentation - Theory & Isactice

. Session - 2022-23

Markanda National College Shahabad, Markanda

Ladwa Road, Shahabad-136135

Registration Form

Please	e fill the following	particula	ars	Paste your recent
1.	Name	:		Photograph
2.	Father's Name	:		
3.	Class	:		
4.	Roll No	:	· · · · · · · · · · · · · · · · · · ·	
5.	Session	:		
6.	Name of the Value	ntation:		
	Theory and Prac			
7.	7. Results in previous university examination			
	Registration Fee		: Rs. 100/-	
Declar	ration:			
I certif	y that, I have unde	erstood th	ne minimum requirements for completion of this V	√alue added
course	in respect of attend	dance, pra	actical work and project work. If I fail then no cer	tificate will
be awa	rded. I am joining	this cour	se as I feel that it will add practical knowledge in	addition to
my reg	ular Programme cu	rriculum.		addition to
Date	***************************************			
			Applicant's §	Signature



MARKANDA NATIONAL COLLEGE

SHAHABAD MARKANDA, DIST. KURUKSHETRA, HARYANA (INDIA)

(Affiliated to Kurukshetra University, Kurukshetra)

https://mncs.ac.in

email:mncshahabad@yahoo.co.ln

Ph: +91-01744-240152

Sr. No. <u>01</u>

Dated: 28/ 06/2023

CERTIFICATE

This is to certify that Mr./Miss Guzjot Single
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 May 20, 23 for 30 hours.
He/Shé secured grade
Jah Junes
Course Coordinator Principal Signature & Seal
Anti-ande Historia (Principalia)
Marks Percentage 85% above 75-84% 65-74% 50-64% 40-50% Grade A+ A B C D



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email:mncshahabad@yahoo.co.in

Ph: +91-01744-240152

Dated: 28/06/2023

CERTIFICATE

This is to certify that Mr./Miss Vinayak Chadla
S/P/O Sh. Narinder Kumar
has completed the value Added Certificate course titled
Instrumentation: Theory and Practice
conducted by Department of Physics
from <u>Feb. 13, 2023</u> to <u>May 20, 2023</u> for <u>30</u> hours.
He/She secured grade
Achilhemer_
Course Coordinator Principal Signature & Seal Markanda National College Markanda (Haryana)
Marks Percentage 85% above 75-84% 65-74% 50-64% 40-50% Grade A+ A B C D