

# SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE AND M.H. MEHTA SCIENCE COLLEGE, PALGHAR

# **DEPARTMENT OF CHEMISTRY**

# Certificate Course Advance Instrumental Analysis

# Under the Aegis of

# **Centre for Excellence and Innovation**

# Academic Year: 2019-2020

Prof. Mahesh Deshmukh CFEI - Chairman Dr. Kiran Save Principal

# **Certificate Course in Advance Instrumental Analysis**

# Report 2019-2020

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# **Certificate course in Advance Instrumental Analysis**

#### Duration: 48 hours

#### Aim: To study the advance instrumental analysis.

#### **Features of the course:**

• Specially designed to give hands on training.

• Customized for the industry.

• Delivered by faculty members of chemistry departments and as well as experts from the industry.

#### **Objectives:**

- To acquire knowledge about advance instrumentation.
- To acquire the skills required in industries.
- To develop skills of handling various analytical instruments.

#### **Eligibility:**

Any science students having chemistry as a subject.

#### **Mode of Examination:**

Theory: Assignment will be provided.

Practical: Practical exam will be based on experiment performed during the course.

**<u>Certification</u>**: Certificate will be provided on the basis of practical examination.

#### **Learning Outcome:**

Students will acquire detail theoretical knowledge as well as practical experience about various laboratory techniques.

Date: 15<sup>th</sup> October, 2019 To, The Principal, Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar

Subject: Approval for Certificate Course in Advance Instrumental Analysis (T.Y.B.Sc.)

#### **Respected Sir**,

For developing instrumental skills in students, we have designed certificate course for the class of T.Y.B.Sc. The course is aimed at enhancing skills and knowledge of students in basic instrumental techniques. This course will benefit the students by providing them with an opportunity to develop their expertise in this area. Their instrument and apparatus handling skills will be improved by the Certificate Course in Advance Instrumental Analysis for T.Y.B.Sc. course.

The Certificate Course will be offered in the month of November, 2019

The details are provided along with this letter. I request you to kindly grant the permission to start this course.

Thanking you.

Yours faithfully

Dr. Suhas Janwadkar Head, Department of Chemistry

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## **SYLLABUS**

	Content	Theoretical	Practical	Duration				
1	Chemical Calculation	Interconversions of one unit to other Plotting of Graphs	Problem solving based on theoretical concepts.	4 hours				
2	Potentiometer	Role of potentiometry in the estimation of drug	<ol> <li>Estimation of diclofenac sodium by potentiometrically using non-aqueous medium.</li> <li>Determination of ketoconazole by potentiometrically using non-aqueous medium.</li> </ol>	4 hours				
3	Colorimeter	Study of calibration curve Study of determination various content in the blood	Estimation of cholesterol and uric acid.	4 hours				
4	Spectrophotometer	Study of calibration curve and standard addition method	Spectrophotometric determination of iron on vitamin tablet	5 hours				
5	Non-aqueous titration	Theory Role of Non aqueous in determination of various drugs. Indicators	Estimation of drug by non-aqueous titration.	4 hours				
6	Moisture determination	Principle Block diagram Instrumentation Working	Estimation of moisture content in a drug by Karl Fischer apparatus.	5 hours				
7	Organic synthesis and Chromatographic techniques	Planning of organic synthesis and its determination of its percentage purity	Synthesis of paracetamol Drug. To find out its purity percentage of paracetamol Drug Preparation of TLC and Column Chromatography	10 hours				
8	Analysis of Drug by back titration	Types of titrations Principle behind back titration	Determination of Aspirin using Back Titration	4 hours				
9	Acid-Base Titration Redox titration	Types of titrations	Analysis of detergent.	4 hours				

		Theory behind acidity, alkalinity, oxygen releasing capacity		
10	Spectral Analysis	Basic concepts and interpretation of spectral data	Problem solving based on theoretical concepts	4 hours
	Total Duration:			48 hours



Sonopant Dandekar Shikshan Mandali's Sonopant Dandekar Arts, V. S. Apte Commerce & M. H. Mehta Science College, Palghar, Dist: Palghar <u>ACADEMIC YEAR 2019-20</u> Date : 5/10/2019

# NOTICE

All the **T.Y.B.Sc.** students are hereby informed that their **Certificate Course** in Advance Instrumental Analysis will begin from 4<sup>th</sup> November, 2019. Batch details are shared along with this notice.

Dr. Suhas Janwadkar

Head ,Department of Chemistry

# STUDENT ENROLLMENT LIST

ROLL NO.	NAME OF THE STUDENT
1	HAKUR PRAJAKTA VASANT
2	MORE KUNAL VILASRAO
3	PAWAR SWAPNIL SUBHASH
4	WADE ADITI SURYAKANT
5	PATIL GAYATRI PRAKASH
6	DAS MADHAVKUMAR VIJAYKUMAR
7	DAS GOVINDKUMAR VIJAYKUMAR
8	RATHAD VAIBHAVI SANTOSH
9	PATRAWALA SAKINA YUNUS
10	MORE PRANJALI PRAMOD
11	KAMBLE SNEHAL JEEVAN
12	THAKUR RINKU UMESH
13	PAWADE AISHWARYA BHALCHANDRA
14	SHELAR PRAJAKTA VINAYAK
15	PATIL NIKITA SHRAVAN
16	GHARAT PURVA NITIN
17	TANDEL SHREYA RANDHIR
18	SHINDE BHAVESH VILAS
19	KINI JANHAVI VIKAS
20	VAIDYA SHIVANI MOHAN
21	MALI RUCHI MANOJ
22	CHAUDHARI VINAY JITENDRA
23	NAIK BHAVIK ANIL
24	PATIL RUSHIKESH DATTATREY
25	UMATOL DEEPALI VASANT
26	PIMPLE YUKTAA MANOI
27	SANKHE SHRADDHA VIPIN
28	CHAUDHARI AKANSHA ASHOK
29	PAWAR POOJA BIBHISHAN
30	BHOIR POONAM JAYDEV



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ROLL NO.	NAME OF THE STUDENT
31	RAUT AKANKSHARAMBHAU
32	SANKHE SAMIKSHA GANESH
33	PATIL TANVI ARUN
34	PATIL ANKIT ANKUSH
35	KINI GAURAV DAMODAR
36	GAIKWAD RUCHITA RAJESH
37	MALI POOJA BALASAHEB
38	MHATRE HARSHIKA HEMANT
39	KHADKE JAYASHRI JANU
40	MEDHA SACHIN VISHNU
41	NIKAM ABHISHEK BALASAHEB
42	ROKADA NITESH NAJU
43	SHAHU VIKAS KAML
44	GHARAT YASH YAAY
45.	GHARAT PARAS NILESH
46	GHARAT JIT DHANANJAY
47	GURAV ROSHAN BRAHMANAND
48	PATIL YASH YATIM
40	PIMPLE SAMRIDDHI SAINATH
50	PATIL SHWETA YMAY
51	GHARAT VISMAY SANDEEP
62	SANKHE TANUJA RABURAO
53	SAROJ SUREXHA RAMSUMER
64	NIRMAL POOJA GANESH
55	THAKUR SAYALI GUBHASH
64	PAWAR HARSHALI CHANDRAKANT
67	DHANU BHAVIKA SATISH
58	MORE PRAJAKTA MOHAN
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59	MALI JINAL SHIRISH



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61	JADHAV RAJ RAVI
62	YADAV UMESH RAJESH
63	GHARAT JANHAVI UMESH
64	GHARAT PRANJAL MINESH
65	MORE TANVI DHARMENDRA
66	SINGH GULAB.GAJENDRABAHADUF
67	MACHHI SAJAN KAMU
68	SARODE PRATIK RAJENDRA
69	PADWALE KRUTIKA PRALHAD
70	YADAV RITESH RAMASHRAY
71	BHAMARE DURVAS ASHOK
72	YADAV INDU RAMASHRAY
73	LADKAT SNEHA DATTATRAYA
74	AREKAR SNEHAL GANPAT
75	PRASAD SHANTI RAJKUMAR
76	THALEKAR PRAGATI BALARAM
77	AWATE SUWARNA ATRINANDAN
78	PANDEY PRIYA PUSHPENDRA
79	YADAV RAHUL LALJI
80	KADAM DIKSHALI DEEPAK
81	NAYAK SHIWANI SATYABAN
82	SINGH RAJPRATAP RAJENDRA
83	PADHI BAINATH RATNAKAR
84	BHAGAT SHRADDHA RUDAL
85	ORE ANKITA JITENDRA
86	SONI SHANU SHYAMJI
87	VAIR ATHIRA GOPAKUMAR
Section Section 1.	AIR ATHIRA GOPAKUMAR
89	OHITE SHAMAL DINESH
1 00	HATRE TANAYA SANTOSH

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ROLL NO.	NAME OF THE STUDENT
91	PATIL SAYALI SUDHAKAR
92	JADHAV POOJA SUBHASH
93	PATIL SAMRUDDHI PRAMOD
94	CHURI AKSHATA JAYPRAKASH
95	MULYE ABHISHEK ANAND
96	JAGTAP ADITYA YASHWANT
97	MORE HIMANSHU UMESH
98	PATIL PAVAN RAJU
99	TANDEL BHAVIK SUDHIR
100	TARE MEHUL KAMLAKAR
101	PAUL AKASH DATTATRAY
102	DHUMAL SATYAM MOHAN
103	NAIK REVANSIDDHI SACHIN
104	PATIL SURAJ RAMCHANDRA
105	PATIL MOHIT GANGADHAR
106	THAKUR ASHRAYA KISAN
107	PATIL TAPASVI PARSHURAM
108	PATIL UGAM DAYANAND
109	TUMBADA MUKESH SURESH
110	GURAV PRASAD HARI
111	BHOIR AADESH DATTATREY
112	DHANDE PUSA SUDHIR
113	PATIL PRATIKSHA NARESH
114	SHUKLA KARAN RAJESH
115	GHATAL SHITAL ARUN
116	PAGI VANDANA LAHANU
117	JADHAV SWAPNA NARAYAN
118	GOUM GAURANG SUNIL
119	AMBALAN MOHAMMED SAHIL KASIM
120	YADAV RAHUL RAMBHARAT

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ROLL NO.	NAME OF THE STUDENT
121	PATIL DIPESH ROHIDAS
122	PATIL BHUMIKA MAHENDRA
123	CHAUDHARI AYUSHRI PRITAM
124	PATIL RIYA MANOHAR
125	ANUSE AVINASH APPA
126	REPALE MADHURI ARUN
127	MELKUNDE SANDHYA MANIKPRABHU
128	TARE SPHURTI HARESHWAR
129	SHAIKH MOHAMMEDFAHAD RAFIQUE
130	MALI NITI SHYAM
131	FALAK GAURAV DNYANESHWAR
132	ANSARI SITARA KHATOON MOHMMAD ISLAM
133	SINGH ANKIT SANJAY
134	UPADHYAY HIMANSHU GANESHLAL
135	DABERAO PRIYANKA GAJANAN
136	KHARAWAR PRINSEI MISHRIPRASAD
137	HADAP MANSI SUNIL

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# ATTENDANCE REPORT

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18 17 12	121	PATIL DIPESH ROHIDAS	Vahi	Drahi		Plati	Opatil	Rahul Apatil		Rahul	Pratil	Rahul		1-10

122	PATIL BHUMIKA MAHENDRA	BPalt	Bald-	BPale	Braft	BRAQUE	-		BRalt	Brady	- ,	BROUN	Brake
123	CHAUDHARI AYUSHRI PRITAM	1											
124	PATIL RIYA MANOHAR	ppatil	potil		* potil		repotil	ppotis	ppotr	ppoter		epour	reati
125	ANUSE AVINASH APPA							and a second second					
126	REPALE MADHURI ARUN		1.114										
127	MELKUNDE SANDHYA MANIKPRABHU			a la como	1. 11.1								
128	TARE SPHURTI HARESHWAR			12		10	12	10			20-	1 P	1.1.18
129	SHAIKH MOHAMMEDFAHAD RAFIQUE	Nghait	. NShut	· MEtalla	Mehant	nonet	MEhall	Mshalk.	narout		Mohale.		
130	MALI NITI SHYAM	manali	n Smeli	nomali	nsmali		nsmal:	nSmali	nSmali				n Sma
131	FALAK GAURAV DNYANESHWAR	falak	folak	folak	Falak	falah		falak		falak		folal	Falah
132	ANSARI SITARA KHATOON MOHMMAD	SLAM	Asilan	Priton	Paita	Baim	Asitum	Pasilin	Biten	Geston	Adm		
133	SINGH ANKIT SANJAY												-
134	UPADHYAY HIMANSHU GANESHLAL					Sugar.	1991	2.4					
135	DABERAO PRIYANKA GAJANAN	Chaber	Poten	Dater	Cebebar	Epebar		Below	Rebeboro	Coebar	Beboo	Debo	ebeb
136	KHARAWAR PRINSEJ MISHRIPRASAD			1.1							1		
137	HADAP MANSI SUNIL	Marsi	Mari	mant		Mann	Marsi		Mans	Marsi	Kland		mans

## **COMPLIANCE REPORT**

Certificate Course in Advance Instrumental Analysis was conducted for the students of T.Y.B.Sc. Students were trained for basic handling of apparatus, chemical calculations, preparation of standard solutions.

A certificate course in advance instrumental analysis provides several benefits to learners. It enhances their skills and knowledge in the field of chemistry.

The course helps to develop a solid understanding of various analytical techniques and methods used in the laboratory and theoretical concepts. Learners gain hands-on experience in using instruments and correct way to handle apparatus.

A certificate in this course adds an advantage to learner's resume. Various sophisticated instruments are widely used in industries, acquiring skills in this area can makes the learner highly relevant and valuable in these sectors, as they can immensely contribute to various areas in the industry.

Course Commencement: 04/11/2019

Course Completion: 30/12/2019

Number of students enrolled for the course: 137

Number of students completed the course: 137

Duration of the course: 48 hours

Dr. Suhas Janwadkar HOD - Chemistry

#### FEEDBACK FROM THE STUDENTS

28/02/19

## Sonopant Dandekar Arts, V.S. Apte Commerce and M.H.Mehta Science College, Palghar

# Internal Quality Assurance Cell

### Feedback Form on Certificate Course for Undergraduate in Chemistry

Name: <u>Grayatri Prakash Patil</u>

Class: T.Y.B.S.C

Roll No.:

Sr.No.	Parameters	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	After completing this course, my knowledge in the topic has increased.	~				
2	This course increased my interest in chemistry related topics.	~	18-			
3	The teacher communicated clearly and effectively	~				
4	The teacher encouraged feedback, class participation and interaction	~				
5	The course started and ended on schedule	~				
	Course objectives were clearly presented	~				
	Course material was well prepared	~				
ι	The course developed my inderstanding of concepts and principles	~				

Signature of student

# **ACTION PHOTOGRAPHS**



# STUDENTS PERFORMING NON-AQUEOUS TITRATION

#### SAMPLE CERTIFICATES

SONOPANT DANDEKAR SHIKSHAN MANDALI'S Sonopant Dandekar Arts, V.S. Apte Commerce & M.H. Mehta Science College, Palghar



#### This is to certify that

## Mr. NAYAK BHAVIK N.

had successfully completed Certificate course Advance Instrumental Analysis

Jan Oor

Head Department of Chemistry

MDeshmukh

CFEI - Chairman

DATE: 12/02/2020

SONOPANT DANDEKAR SHIKSHAN MANDALI'S Sonopant Dandekar Arts, V.S. Apte Commerce & M.H. Mehta Science College, Palghar



#### This is to certify that

## Ms. PATIL NIKITA SHRAVAN

had successfully completed Certificate course Advance Instrumental Analysis

istar Ara

Head Department of Chemistry MDeshmukh

CFEI - Chairman



PRINCIPAP TINCIPAP Socopant Dandekar Arts place V.S. Apte Commerce College & M.H. Mehta Science College PALGHAR (W.R.) Diet Palebat, Pin-401404

DATE: 12/02/2020

SONOPANT DANDEKAR SHIKSHAN MANDALI'S Sonopant Dandekar Arts, V.S. Apte Commerce & M.H. Mehta Science College, Palghar

# Certificate

# OF COMPLETION

## This is to certify that

# Ms. PATIL TANVI ARUN

had successfully completed Certificate course Advance Instrumental Analysis

Townlor Head

A LEER

Department of Chemistry

MDeshmukh

CFEI - Chairman

PRINCIPAP TINCIPAP Senopant Dandekar Arts Dide V.S. Apte Commerce College & M.H. Mehta Science College PALGHAR (W.R.) Dist. Palghar, Pin-401404

DATE: 12/02/2020