

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

# **DEPARTMENT OF CHEMISTRY**

# Certificate Course in Advanced Instrumental Analysis

# Under the Aegis of

# Centre for Excellence and Innovation

# Academic Year: 2018 - 2019

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

# Certificate course in Advance Instrumental Analysis

# Report 2018-2019

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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: 31<sup>st</sup> July, 2018 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 two batches: The first batch in the August 2018 and the second batch in April 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. Shirish Pitale Head, Department of Chemistry

Sovedimed

## **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	Types of titrations	Analysis of	4 hours
	Redox titration	Theory behind	detergent.	
		acidity, alkalinity,		
		oxygen releasing		
		capacity		
10	Spectral Analysis	Basic concepts	Problem solving	4 hours
		and interpretation	based on theoretical	
		of spectral data	concepts	
	Total Duration:			48 hours

#### Sonopant Dandekar Shikshan Mandalis's

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

#### ACADEMIC YEAR 2018-19

Date: 6th August, 2018

#### DEPARTMENT OF CHEMISTRY IN COLLABORATION WITH CENTRE FOR EXCELLENCE AND INNOVATION

## **NOTICE**

All the F.Y.BSc. students are hereby informed that their Certificate Course in Advanced Instrumental Analysis of Batch - 1 will begin from 24<sup>th</sup> August, 2018.

The detail scheduled will be available with the course coordinator.

Interested students can enroll by filling the application form which is available in the staffroom, ground floor, Chemistry Building.

After successful completion of the course, participants will be awarded with certificates from the college.

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Dr. Shirish Pitale Department of Chemistry - HOD

#### STUDENT ENROLLMENT LIST

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4		RAUT KRUTIKA NANDKUMAR		MISTRY / D&D
	2607	MAURYA GAJENDRA RAMNIWAS	MALE	MISTRY / D&D
5	2608	BHAGAT NILAM SURENDRA	FEMALE	MISTRY/D&D
	2609	CHATURVEDI NITESH NAGENDRA	MALE	MISTRY / D&D
6.	2611	TAMORE MANASI VINAYAK	FEMALE	MISTRY/D&D
7	2612	DAWANE VAISHNAVI BHUWANESHWAR	FEMALE	MISTRY / D&D
8	2613	SHERWAL SHRADDHA SANJAY	FEMALE	MISTRY/D&C
9	2614	PATIL SIDDHI RAJENDRA	FEMALE	MISTRY / D&I
10	2616	THAKRE ANIALI JAYRAM	FEMALE	MISTRY / D&I
11	2618	PATIL KIMAYA SOPAN		MISTRY / D&I
12	2619	GHARAT SHRADDHA PANKAJ	FEMALE	MISTRY/D&
13	2620	GHARAT AKSHATA ATMARAM		MISTRY / D&
14	2623	PEERZADA SANIYA MOHD SALIM		MISTRY / D&
15	2624	NAIK SHIVANI VISHWANATH		MISTRY/D&
16	2625	PIMPLE PRACHI NARESH	FEMALE	MISTRY/D&
17	2629	RAUT KRUTIK SAINATH	MALE	MISTRY/D&
18	2631	MUNDE KUNAL MOHAN	MALE	MISTRY / D&
19	2632	SANKHE TANVI VINOD	FEMALE	MISTRY/D&
20	2633	PIMPLE ASHWINI SURESH		MISTRY/D&
21	2634	SANKHE SIDDHARTH SUNIL	MALE	MUSTRY / D&
22	2635	PADYAL GAURI SHASHIKANT	FEMALE	MISTRY / D&
23	2636	PAWADE SAKSHI JAGDISH	FEMALE	MISTRY/D8
24	2640	PATIL KOMAL LAXMAN	FEMALE	MISTRY / Da
25	2641	SAYYED NIDA KHALIL	FEMALE	MISTRY / D8
25	2642	WADHU MAYURI VASANT		MISTRY / DS
20	2642	BARAD RASULA KASHINATH	FEMALE	MISTRY / D8
	2647	BARI SNEHA DINESH	FEMALE	MISTRY / DA
28	2648	MOKASHI JYOTIKA SURESH		MISTRY / DE
29		KARCHE SOMNATH BAJIRAO	MALE	MISTRY / DA
30	2649	ANSARI RUKSANA HUSNAINE	FEMALE	-
31	2650	BARI SURADNI VILAS		MISTRY / D
32	2651	GAWAD RUSHALI RAIESH	FEMALE	
33	2652	SHIRSAT RUPALI NAVNATH	FEMALE	
34	2657		FEMALE	
35	2658	MESTRY GUNIAN PANKAU	FEMALE	
36	2659	BANDEKAR POOJA SUNILDUTT	-	
37	2660	THORAT SHUBHAM MAHADEO	MALE	MISTRY / D
38	2661	THALUK SANDLEF FRADLEF	MALE	MISTRY / D
39	2662	KHAN GULIAR FARUKH	MALE	MISTRY/C
40	2663	PAWADE TELASWINI SANTOSH	FEMALE	
41	2664	PATIL POOJA HEMANT		MISTRY / D
1.0.0	2665	KUTE POOJA BABAN	FEMALE	MISTRY / C
47	2666	NAVARKAR SHARVARI PRABHAKAR	FEMALE	
42		SHIRSATH UTKARSHA UDDHAV	TTANK	MISTRY / D



45	2670	WAGHMARE SUJIT SANJAY		
46	2671	JADHAV VIPUL SANTOSH		MISTRY/DED
47	2672	MALI JANMESH ASHOK		MISTRY / D&D MISTRY / D&D
48	2673	JADHAV BHAVESH BAPU	MALE	MISTRY / D&D
49	2674	SINGH SONU KEDARNATH	MALE	MISTRY / D&D
50	2675	RAUT SUPRIYA VIVEK	FEMALE	MISTRY / D&D
51	2676	PATIL MITALI DINESH	TEMALE	MISTRY / D&D
52	2677	MORE KHUSHALI SADASHIV	FEMALE	MISTRY / D&D
53	2678	PATIL KIMAYA RAMCHANDRA	FEMALE	MISTRY / D&D
54	2682	NAIK KRUPESH MARTAND	MALE	MISTRY / D&D
55	2683	PATIL TANMAYI NILESH	FEMALE	MISTRY / D&D
55	2684	PATIL VRUSHALI RAJENDRA	FEMALE	MISTRY / D&D
57	2685	JHA RAJESH SHAILENDRA	MALE	MISTRY / D&D
58	2687	VAYADA PRITESH LAXMAN	MALE	MISTRY / D&D
59	2688	THAKUR SHUBHAM HEMANT	MALE	MISTRY / D&D
60	2689	DHUMAL BHAKTI LAHU	FEMALE	MISTRY / D&D
61	2690	YADAV PREETI KRISHNADATT	FEMALE	MISTRY / D&D
62	2691	RAUT MAYURESH VINOD	MALE	MISTRY / D&D
63	2693	THORAVE AKSHAY KESHAV	MALE	MISTRY / D&D
64	2695	GADIYAR NEERAJ TARNATH	MALE	MISTRY / D&D
65	2695	CHOUDHARY SANTOSH LALBAHADUR	MALE	MISTRY / D&D
65	2701	TINVARI JAYPRAKASH RAKESH	MALE	MISTRY / D&D
67	2704	BABAR MANOJ SURESH	MALE	MISTRY / D&D
65	26009	IHA POOJA MANOJ	FEMALE	MISTRY / D&D
69	26011	JADON HARSHA RAJPAL	FEMALE	MISTRY / D&D
70	26012	PATIL PURVA PRADIP	FEMALE	MISTRY / D&D
71	26013	KADAM SHIVANI VASANT	FEMALE	MISTRY / D&D
72	26014	TIWARI JYOTI SHIVMURAT	FEMALE	MISTRY / D&D
73	26021	KARMODA NITA ATMARAM	FEMALE	MISTRY / D&D
74	26024	PATIL SIDDHESH NARESH	MALE	MISTRY / D&D
75	26025	GHULE RUSHIKESH SUBHASH	MALE	MISTRY / D&D
	25025	GHARAT JANMESH SADASHIV	MALE	MISTRY / D&D
76		GAWANDE SHUBHAM GAJANAN	MALE	MISTRY / D&D
77	25027	PATIL PRATIKSHA ANANT	FEMALE	
78	25025	BAGAL BHAGYASHREE SHIVAJI	FEMALE	
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81	25031	PATIL PRIYA VISHWAS		
82	26032	CHAUDHARI KARAN MANOJ	MALE	MISTRY / D&D
83	26033	PATIL DHAVALRAJ SANDESH	MALE	MISTRY / D&D
64	26034	PANDIT SIDDHESH VUAY	MALE	MISTRY / D&D
85	26035	PATIL VEDA UMESH	FEMAL	E MISTRY / D&D
55	26036	SHAGAT GUDDU RAMKESHWAR	MALE	MISTRY / D&D
87	26037	GUPTA KANHAIYA BHOLAPRASAD	MALE	MISTRY / D&D
88	26035	YADAV SOHANKUMAR DEVENDRA	MALE	MISTRY / D&D
89	26039	YADAV SANDESH AMARSINGH	MALE	MISTRY / D&D
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3	26055	DAWANE PRACHITEE AMOL	FEMALE	MISTRY/D&D
14	26056	WAYKOLE PRIYANKA UMESH	FEMALE	MISTRY/D&D
95	26058	YADAV BABITA RAJARAM	MALE	MISTRY/D&D
96	26059	DOKADE DECENTION	FEMALE	MISTRY/D&D
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#### Sonopant Dandekar Shikshan Mandalis's

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

ACADEMIC YEAR 2018-19

Date: 27th March, 2019

#### DEPARTMENT OF CHEMISTRY IN COLLABORATION WITH CENTRE FOR EXCELLENCE AND INNOVATION

#### **NOTICE**

All the F.Y.BSc. students are hereby informed that their Certificate Course in Advanced Instrumental Analysis of Batch - 2 will begin from 4<sup>th</sup> April, 2019.

The detail scheduled will be available with the course coordinator.

Interested students can enroll by filling the application form which is available in the staffroom, ground floor, Chemistry Building.

After successful completion of the course, participants will be awarded with certificates from the college.

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Dr. Shirish Pitale Department of Chemistry - HOD

## ATTENDANCE REPORT

## Batch - 1 (Roll No. 1 to 30)

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Advance

## Batch - 1 (Roll No. 31 to 60)

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		RAUT SUPRIYA VIVEK	Sonu	Jonu	Sonu	donu	donu	Acru	conu			Bhavell	Bhavest	
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Advance

## ATTENDANCE REPORT

#### Batch - 2 (Roll No. 61 to 91)

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62	RAUT MAYURESH VINOD	M.Rai		A M.Rai	ti Varee	ti Poree			ti Prec	ti Poreet	i Pree		ti Poreeti
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## Batch - 2 (Roll No. 92 to 99)

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#### **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.

Batch I

Course Commencement: 12/11/2018

Course Completion: 26/11/2018

Number of students enrolled for the course: 60

Number of students completed the course: 60

Duration of the course: 48 hours

Batch II

Course Commencement: 04/04/2019

Course Completion: 17/04/2019

Number of students enrolled for the course: 39

Number of students completed the course: 39

Duration of the course: 48 hours

lei

Dr. Shirish Pitale HOD – Chemistry

#### **FEEDBACK FORM**

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: Sneha Dinesh Bari

Class: T.Y.B.Sc

Roll No.: 28

Parameters	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
After completing this course, my knowledge in the topic has increased.	~				
This course increased my interest in chemistry related topics.	~				
The teacher communicated clearly and effectively	$\checkmark$				
The teacher encouraged feedback, class participation and interaction	~				
The course started and ended on schedule	~		_		
Course objectives were clearly presented	~				
Course material was well prepared	-	+			
The course developed my understanding of concepts and principles	~				

Sneha

## **ACTION PHOTOGRAPHS**



# DR. DILIP YADAV (RESOURCE PERSON) SHOWING THE ESTIMATION OF DRUG

#### 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

Ms. TAMORE MANASI V.

had successfully completed Certificate course Advance Instrumental Analysis

Danne Head

Head Department of Chemistry MDeshmukh

CFEI - Chairman



PRINCIPAD 1-111 C Sonopant Dandekar Arts Die V.S. Apte Commerce College & M.H. Mehta Science College PALGHAR (W.R.) Dist. Palehar, Pin-401404

DATE: 29-04-2019

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 KOMAL L.

had successfully completed Certificate course Advance Instrumental Analysis

Dannel Dan

A sest

Head Department of Chemistry MDeshmukh

CFEI - Chairman

DATE: 29-04-2019

PRINCIPAD 1- In Cipital Sociopant Dandekar Alts pilles V.S. Apte Commerce College & M.H. Mehra Science College PALGHAR (W.R.) Dist. Palehar, Pin-401404