



# Satish Pradhan Dnyanasadhana College, Thane

(Arts, Science and Commerce)

Reaccredited by B<sup>+</sup> Grade (CGPA 2.69) at 3<sup>rd</sup> Cycle by NAAC

## Department of Chemistry

## Certificate Course 2021-22

Certificate Course Code CC16

**December 09-20, 2021**

# Introduction and Application of Analytical Instruments

**Timings: From 03:00 pm to 06:00 pm**

This course will provide students with a background in modern analytical chemistry with an emphasis on instrumentation methods. Applications of instrumental analytical chemistry in environmental monitoring, forensics and materials science will also be presented.

**Eligibility: All Chemistry Undergraduate and Postgraduate Students**

Join the WhatsApp Group

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Register



**Dr. K.R. Rathod**  
Course Coordinator

**Dr. S.P. Banerjee**  
Head, Department of Chemistry

**Dr. H.K. Chitte**  
I/c Principal



**SATISH PRADHAN DNYANASADHANA COLLEGE, THANE  
(ARTS, SCIENCE AND COMMERCE)  
DEPARTMENT OF CHEMISTRY  
Certificate course  
2021-22**

**INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS**

**From 09<sup>th</sup> December, 2021 to 20<sup>th</sup> December, 2021**

**Timings :3.00 pm to 6.00pm**

**Description:**

This course will provide students with a background in modern analytical chemistry with an emphasis on instrumentation. Methods and applications of instrumental analytical chemistry in environmental monitoring, forensics and materials science will also be presented.

**Eligibility: All chemistry undergraduate and post graduate students**

**Objectives:**

*To enable students*

*Acquire knowledge about the widely used analytical Instruments*

*Learn specific technique employed for monitoring different pollutants in air and water.*

*Know the instruments used for environmental pollution monitoring.*

*Reinforce chemical principles central to analytical chemistry.*

*Introduce instrumental techniques for chemical measurement.*

*Develop critical thinking for interpreting analytical data.*

*Select instrumentation appropriate to the measurement need.*

**Duration :**

Certificate course will be of 10 days -30 hours- consisting of lectures, hands on experience of handling and operating the instruments, discussions, preparation & submission of project work, internal assessment, mcq test and feedback.

**Syllabus and resource persons**

<b>Modules</b>	<b>Topics and syllabus</b>	<b>Date</b>	<b>No. of Hours</b>	<b>Resource person</b>
<b>1</b>	<b>Introduction to analytical instrumentation</b>	<b>09/12/21</b>	<b>03</b>	<b>Inauguration By HOD of Chemistry department : Dr Shivani Banerjee Brief introduction of the course : Coordinator : Dr Kalpana Rathod Resource speaker: Dr G.R Bhagure</b>
<b>2</b>	<b>Classification- Analytical Instrumental methods:</b>	<b>10/12/21</b>	<b>03</b>	<b>Dr S.P Banerjee</b>
<b>3</b>	<b>Introduction And Principal Application of G.C-MS And HPLC-</b> <ul style="list-style-type: none"> <li>● Qualitative and quantitative analysis of organic compounds</li> <li>● Pollutant detection, dairy product and food analysis etc.</li> </ul>	<b>11/12/21</b>	<b>03</b>	<b>Dr K.R Rathod</b>

4	<b>Flame photometry:</b> Introduction And Application Sample preparation, Determination of Na,K,Li and Ca by Calibration Curve method in Blood, Soft drink (Thumps up/Coca-Cola) Sample , and Tomato chips (Lays) ..	13/12/21	03	Dr G.R Bhagure
5	<b>Introduction And Application of pH meter-</b> measurements of pH in Soil, Water and Health care products  Importance of pH measurements in agriculture, Environmental and Healthcare and Clinical field.	14/12/21	03	Dr B.P Langi
6	<b>Colourimetry- applications of instrumental analysis:</b>	15/12/21	Dr S.S Kokane	Dr S.S Kokane
7	<b>Conductometry- applications of instrumental analysis.</b>	16/12/21	03	Dr F.J.Khan
8	<b>A concise review :</b> On various Analytical instruments and applications-Tracing antibiotics,microorganisms in food,air pollutant soap in oil etc.	17/12/21	03	Mr Satu Chavan
9	<b>Role of computers in analytical instrumentation</b>	18/12/21	03	Mr A.S.Khanna
10	<b>Introduction to Mass Spectrometer.</b>	20/12/21	03	Dr S.S Kokane

<b>Test on Certificate course</b>			<b>MCQ test</b>
			<b>Valedictory function</b>
			<b>Feed back</b>

### **Further Readings**

1. Vogel's Textbook of Quantitative Chemical Analysis, 5th Ed., By G.H. Jefferey, J. Bassett, J. Mendham, and R.C. Denney, ELBS – Longman.
2. Fundamentals of Analytical Chemistry, 7th Ed., By D.A. Skoog, D.M. West and F.J. Hooler, Sounders College Publishing.
3. Quantitative Analysis, 5th Ed., by R.A. Day, Jr. and A.L. Underwood, Prentice – Hall of India.
4. Basic Concepts of Analytical Chemistry, 2nd Ed., By S.M. Khopkar, New Age Publishers.
5. Comprehensive Analytical Chemistry, Vol. IA, Edited By C.L. Willson and D.W. Wilson, Elsevier Publishing Company

**Dr S.P.Banerjee**

**Head Department of Chemistry .**

**Dr. K.R. Rathod**

**Coordinator**

**SATISH PRADHAN DNYANASADHANA COLLEGE, THANE  
(ARTS, SCIENCE AND COMMERCE)**

**DEPARTMENT OF CHEMISTRY**

To,

Principal

Satish Pradhan Dnyanasadhana College, Thane

**Subject: Guidance regarding conducting a certificate course**

Respected Sir,

Department of Chemistry is planning to conduct a certificate course in chemistry in the month of December 2021 titled "**INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS**"

Please guide us regarding procedure and what guidelines are need to be followed and what are the expectations with respect to NAAC requirements for the certificate course.

Thank you,

Yours Faithfully

H.O.D

DEPARTMENT OF CHEMISTRY



# DNYANASADHANA, THANE

EST : 1980 (Reg. No. MAH/759/THN)

Off. Eastern Express Highway, Dnyanasadhana Marg, Thane - 400 604. ☎ : 2582 16 15 / 2583 07 22  
Website : [www.dnyanasadhanacollege.org](http://www.dnyanasadhanacollege.org) • Email : [dnyanasadhanamanagement@gmail.com](mailto:dnyanasadhanamanagement@gmail.com)

**FOUNDER TRUSTEE  
& PRESIDENT**

**MR. SATISH S. PRADHAN**  
Mobile : 9322229559

**TRUSTEE  
& GENERAL SECRETARY**

**MR. KAMLESH S. PARDHAN**  
Mobile . 9920806232

**TRUSTEE  
& TREASURER**

**MR. SATISH G. SHETH**  
Mobile 9323633231

**TRUSTEE  
ADV. ANIL G. PHANSE**  
Mobile 9987723059

**TRUSTEE  
MR. SHRIKANT R. DEOLE**  
Mobile : 9820099600

**TRUSTEE  
MRS. MANASI K. PRADHAN**  
Mobile 7738148545

**TRUSTEE  
MRS. ASHWINI M. KOTWAL**  
Mobile : 9860611278

**DT/ 71A /2020-21**

**Date: 09.11.2021**

To,  
Dr. S.P. Banerjee  
Head, Department of Chemistry

**Subject: Sanction of proposed Certificate Course of your department**

Dear Madam,

Your proposal dated 5<sup>th</sup> July, 2021 for the conduct of a Certificate Course titled, "Introduction and Application of Analytical Instruments" was placed before the CDC held on 21<sup>st</sup> October, 2021. The proposal with syllabi designed was discussed at length in the CDC and unanimously approved. You are hereby instructed to conduct the same in the current academic year 2021-22.



*Pradhank*  
**SECRETARY**

## Registration of students for the Certificate Course INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS

Timestamp	Email Address	Name of the Student	Class	Roll No.	Mobile No.	Gender
11/23/2021 17:30:53	shivanigodse09@gmail.com	Shivani Mukund Godse	T.Y.B.Sc.	21	9324073971	Female
11/23/2021 17:31:54	mayuriwaghere123@gmail.com	Mayuri Mangal Waghere	M.Sc. Part I	24	9768442131	Female
11/23/2021 17:31:58	sanchitasm23@gmail.com	Sanchita Sandeep malankar	T.Y.B.Sc.		9372450129	Female
11/23/2021 17:33:27	janglekanchan24@gmail.com	Kanchan Bapu Jangle	F.Y.B.Sc.	71	9819954655	Female
11/23/2021 17:33:58	geeta.yadav00007@gmail.com	Neetu Ravindra Yadav	S.Y.B.Sc.	46	8591082234	Female
11/23/2021 17:35:53	adarsh.virendra@gmail.com	ADARSH VIRENDRA SRIVASTAV	M.Sc. Part II	20	8692991163	Male
11/23/2021 17:35:55	muskan.jaiswar2018@gmail.com	Muskan R. Jaiswar	T.Y.B.Sc.	28	9920255343	Female
11/23/2021 17:36:14	gaurineelamsingh@gmail.com	Gauri Singh	M.Sc. Part II	18	9167278376	Female
11/23/2021 17:37:47	manishagawane12@gmail.com	Manish Sunil Agawane	M.Sc. Part II	01	8169329053	Male
11/23/2021 17:38:50	ankitkumawat1401@gmail.com	Ankit Kumawat	T.Y.B.Sc.	40	8875391847	Male
11/23/2021 17:40:21	shweta2001ghole@gmail.com	Shweta Santosh ghole	T.Y.B.Sc.	19	7718973791	Female
11/23/2021 17:41:22	sarveshmisal79@gmail.com	Sarvesh Santosh Misal	M.Sc. Part I	14	8698627999	Male
11/23/2021 17:41:49	pmaheshwari1605@gmail.com	Maheshwari Patil	T.Y.B.Sc.	54	08454934217	Female
11/23/2021 17:43:47	mariyahashmi5@gmail.com	Hashmi Mariya Amjad ali	T.Y.B.Sc.	23	7304231029	Female
11/23/2021 17:44:41	anandmpchouhan4@gmail.com	Anand Munna Chouhan	F.Y.B.Sc.	4	9594828905	Male
11/23/2021 17:46:26	pranaliranshur@gmail.com	Pranali Pandharinath Ranshur	M.Sc. Part I	22	7715981502	Female
11/23/2021 17:46:30	rutuuparab567@gmail.com	Hrishikesh Parab	M.Sc. Part II	21249	+918779829718	Male
11/23/2021 17:47:08	diyapophalkar@gmail.com	Diya pophalkar	F.Y.B.Sc.	135	09321518657	Female
11/23/2021 17:47:11	simranhumbre16@gmail.com	Simran Sanjay Humbre	F.Y.B.Sc.	145	8591890236	Female
11/23/2021 17:48:26	anjunevrekarakar0402@gmail.com	Nevrekar Anjali Sakharam	F.Y.B.Sc.	27	9076035690	Female
11/23/2021 17:50:53	rajgaikar000@gmail.com	Raj gaikar	M.Sc. Part II	6	8446321511	Male
11/23/2021 17:53:15	kanadekomal17@gmail.com	Komal Manohar Kanade	T.Y.B.Sc.	38	9326844003	Female
11/23/2021 17:58:11	poojay1289@gmail.com	Pooja lallu prasad yadav	F.Y.B.Sc.	141	8976015474	Female
11/23/2021 18:01:53	bhavanakoli66@gmail.com	Bhavana Shantaram Koli	T.Y.B.Sc.	44	9372410327	Female
11/23/2021 18:03:35	amolchalke2019@gmail.com	Amol Chalke	S.Y.B.Sc.	53	+919321270744	Male
11/23/2021 18:12:49	tiwariad26120000@gmail.com	Tiwari Adarsh Kumar Dinesh Chan	T.Y.B.Sc.	83	8601622665	Male
11/23/2021 18:20:16	sanketphadatare074@gmail.com	Sanket	F.Y.B.Sc.	78	9324741680	Male
11/23/2021 18:31:07	bhaleraoaadesh55@gmail.com	Aadesh Vasant Bhalerao	T.Y.B.Sc.		9594327858	Male
11/23/2021 18:33:57	vaitej22@gmail.com	Priyanka Bapu Kirte	T.Y.B.Sc.	38	8097390585	Female
11/23/2021 18:40:05	shashikantchinkate21@gmail.com	Shashikant sitaram chinkate	T.Y.B.Sc.	11	9619130541	Male
11/23/2021 18:46:52	divyachougule1234@gmail.com	Divya Dattatray Chougule	T.Y.B.Sc.	10	9321507426	Female



Timestamp	Email Address	Name of the Student	Class	Roll No.	Mobile No.	Gender
11/23/2021 18:47:10	jjadav2709@gmail.com	Jyoti Kuldeep Yadav	T.Y.B.Sc.	105	9324540015	Female
11/23/2021 18:51:19	parabgandharvi@gmail.com	Gandharvi Devdatta Parab	S.Y.B.Sc.	27	7304338402	Female
11/23/2021 18:55:43	wakdeakshay.12@gmail.com	Akshay Hari Wakde	T.Y.B.Sc.	84	8425989198	Male
11/23/2021 19:02:25	jadhavgeeta150@gmail.com	Jadhav geeta babu	T.Y.B.Sc.	24	7304760693	Female
11/23/2021 19:05:09	rutujakolekar16@gmail.com	Shraddha sanjay kolekar	S.Y.B.Sc.	58	9664748450	Female
11/23/2021 19:06:23	badmastiboyz778@gmail.com	Rohit Shivprashad Shukla	T.Y.B.Sc.	84	9930930565	Male
11/23/2021 19:09:38	aditivaitiy40@gmail.com	Aditi Ashok Vaity	S.Y.B.Sc.	40	9757011111	Female
11/23/2021 19:14:07	shwetashrimal409@gmail.com	Shweta Shrimal	F.Y.B.Sc.	39	9967403293	Female
11/23/2021 19:15:55	rohanjadhav8808@gmail.com	Rohan Hanumant Jadhav	F.Y.B.Sc.	14	8108352554	Male
11/23/2021 19:17:41	rituchundawat67@gmail.com	Rituraj Chumdawat	T.Y.B.Sc.	97	8425981245	Female
11/23/2021 19:18:24	latikakathait0401@gmail.com	Latika Kathait	T.Y.B.Sc.	36	7738966087	Female
11/23/2021 19:20:10	n.r.s.222016@gmail.com	Nilesh Radheshyam sahu	F.Y.B.Sc.	81	9930648250	Male
11/23/2021 19:24:14	sufiyashah970@gmail.com	Shah Sufiya Jamaluddin	S.Y.B.Sc.	34	9326568747	Female
11/23/2021 19:38:02	snehankitasawant2003@gmail.com	Snehankita Angad Sawant	S.Y.B.Sc.	33	9326586788	Female
11/23/2021 19:40:38	prishinde393@gmail.com	Priti Pradip shinde	S.Y.B.Sc.	61	8928712811	Female
11/23/2021 20:22:54	snaike.sn@gmail.com	Srushti Uday Naik	T.Y.B.Sc.	50	+918850287757	Female
11/23/2021 20:25:28	mitaligovilkar2000@gmail.com	Mitali	M.Sc. Part I	6	8767454230	Female
11/23/2021 20:34:18	ramkripalprajapati564@gmail.com	Gudiya prajapati	F.Y.B.Sc.	140	9137999780	Female
11/23/2021 20:51:43	shinganganesh0609@gmail.com	Ganesh Shingan	T.Y.B.Sc.	72	+18928647947	Male
11/24/2021 7:45:12	rddonde2@gmail.com	Rahul dasharath donde	F.Y.B.Sc.	07	9324884844	Male
11/24/2021 10:05:30	jeenalmacwan336@gmail.com	Jeenal Macwan	S.Y.B.Sc.	23	7900152336	Female
11/24/2021 10:24:35	aakankshagole082002@gmail.com	Aakanksha Atul Gole	T.Y.B.Sc.	95	9890390355	Female
11/24/2021 18:09:29	mrnmayidhage548@gmail.com	Mrnmayidhage	S.Y.B.Sc.	11	8767902575	Female
11/24/2021 20:18:22	asthachavan17@gmail.com	Astha manoj chavan	F.Y.B.Sc.	29	9029195051	Female
11/24/2021 20:19:58	swara1468@gmail.com	Anshika Vishwkarma	T.Y.B.Sc.	84	8450973488	Female
11/24/2021 20:20:56	sahilshinde9920@gmail.com	Sahil Suhas Shinde	T.Y.B.Sc.	81	+919920516111	Male
11/24/2021 21:15:31	bhosaleashwini1999@gmail.com	Ashwini Ajay Bhosale	T.Y.B.Sc.	07	9136706846	Female
11/24/2021 21:47:01	riyajaiswar8005@gmail.com	Riya Shitalaprasad Jaiswar	T.Y.B.Sc.	29	7977983544	Female
11/26/2021 11:26:47	sandyapawar2001@gmail.com	Sandhyarani pawar	S.Y.B.Sc.	29	7304175592	Female
11/30/2021 17:50:38	akshay.mumbai.5@gmail.com	Akshay Ambu	M.Sc. Part II		9987099051	Male

Timestamp	Email Address	Name of the Student	Class	Roll No.	Mobile No.	Gender
11/30/2021 20:04:50	shifabhendwade@gmail.com	Shifa Khalid Bhendwade	T.Y.B.Sc.	08	7666443035	Female
11/30/2021 20:39:03	rewaleshreyash0914@gmail.com	Shreyash Deepak Rewale	F.Y.B.Sc.	80	8097152846	Male
11/30/2021 21:03:57	kingpawalkar@gmail.com	Vinay Pawalkar	S.Y.B.Sc.	28	8291457402	Male
11/30/2021 21:52:29	tanvishirgaonkar01@gmail.com	Tanvi pandurang Shirgaonkar	M.Sc. Part I		9167419728	Female
12/2/2021 22:43:21	adityasawant27664@gmail.com	Aditya Anil Sawant	T.Y.B.Sc.	72	8380029773	Male
12/2/2021 22:56:53	katholesnehal@gmail.com	Kathole Snehal Sunil	T.Y.B.Sc.	42	7770055467	Female
12/8/2021 20:25:21	chetankale9135@gmail.com	Chetan Balu Kale	T.Y.B.Sc.		9967309787	Male
12/8/2021 20:26:26	vishwajeetpawar26@gamil.com	Vishwajeet vilas pawar	T.Y.B.Sc.	67	9326251214	Male
12/8/2021 20:27:09	dhawareyashvardhan2209@gmail.co	Yashvardhan Hanumant Dhaware	T.Y.B.Sc.	17	9987254504	Male
12/8/2021 20:29:03	sakshipatil5969@gmail.com	Samruddhi Suresh Patil	T.Y.B.Sc.	56	9324696916	Female
12/8/2021 20:29:20	siddhivishwakarma900@gmail.com	Siddhi Vishwakarma	S.Y.B.Sc.	43	07678092838	Female
12/8/2021 20:29:38	prathmeshmalage45@gmail.com	Malage prathmesh malasidha	F.Y.B.Sc.	21	9372361699	Male
12/8/2021 20:30:29	sarveshjain5024@gmail.com	Sarvesh Jain	T.Y.B.Sc.	30	+917045723530	Male
12/8/2021 20:35:29	rutikaadsul0@gmail.com	Rutika Bahiru Adsul	T.Y.B.Sc.	1	7678049053	Female
12/8/2021 20:35:55	poonammandave20@gmail.com	Poonam Uddhav Mandave	T.Y.B.Sc.	50	9321915027	Female
12/8/2021 21:01:56	snehagore49984@gmail.com	Sneha Balasaheb Gore	F.Y.B.Sc.	10	7045385956	Female
12/8/2021 21:18:06	guptasoni963@gmail.com	Soni Gupta	S.Y.B.Sc.	14	7738063444	Female
12/8/2021 21:19:57	yogitajagdale005@gmail.com	Yogita Hanumnt Jagdale	F.Y.B.Sc.	95	7020188153	Female
12/8/2021 21:43:09	anuragdhumal1313@gmail.com	Anurag Manoj Dhumal	F.Y.B.Sc.	06	9284138603	Male
12/8/2021 22:48:05	abhigupta929292@gmail.com	Abhishek gupta	S.Y.B.Sc.	56	9029722364	Male
12/8/2021 23:35:52	sharmapriyarb11@gmail.com	Priya Sharma Rambachan	F.Y.B.Sc.	136	9152296331	Female
12/9/2021 9:05:56	rounak.mourya1912@gmail.com	Rounak sukhdev mourya	F.Y.B.Sc.	22	8928917086	Male
12/9/2021 12:04:01	kubalmayuri@gmail.com	Mayuri Satyavijay Kubal	T.Y.B.Sc.	45	9076375606	Female
12/9/2021 14:46:50	prakashmane6543@gmail.com	Prakash Vilas Mane	T.Y.B.Sc.	51	9767280677	Male
12/9/2021 22:23:47	thakre.sakshi2001@gmail.com	SAKSHI SUNIL THAKRE	T.Y.B.Sc.	88	9819396457	Female
12/10/2021 8:26:47	smitathorat.08@gmail.com	Pranali Raju Thorat	F.Y.B.Sc.	43	9137247259	Female
12/11/2021 11:52:37	samudrepreprana76@gmail.com	Prerana Dinesh samudre	F.Y.B.Sc.	94	8291689965	Female
12/15/2021 9:34:41	mrudula692@gmail.com	Mrudula Milind Kadam	S.Y.B.Sc.	17	8169744575	Female
12/15/2021 9:51:25	rupaliisamantri@gmail.com	Rupali Arvind isamantri	S.Y.B.Sc.	57	9321851648	Female
12/15/2021 15:18:05	dadayevale512@gmail.com	Saurabh tanaji yevale	S.Y.B.Sc.	64	9326206674	Male

Timestamp	Email Address	Name of the Student	Class	Roll No.	Mobile No.	Gender
12/15/2021 15:21:25	aartiharer97@gmail.com	Aarti harer	S.Y.B.Sc.	67	8355892644	Female
12/15/2021 15:21:32	ashwaryamane13@gmail.com	Aishwarya Sudesh Mane	M.Sc. Part I	13	8692827263	Female
12/15/2021 15:21:46	saydesh02@gmail.com	Sayali Surendra Deshmukh	M.Sc. Part I	02	8550931823	Female
12/15/2021 15:22:07	rutujapadwal28@gmail.com	Rutuja Rajendra Padwal	M.Sc. Part I	17	9702212750	Female
12/16/2021 15:14:39	dhannodiksal@gmail.com	Dhanashree Pandurang Gawali	M.Sc. Part I	04	8928150973	Female
12/20/2021 14:48:12	jotypr01@gmail.com	Jyoti Parasnath Prajapati	T.Y.B.Sc.	62	7304850929	Female



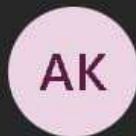
**Satish Pradhan**  
**Dnyanasadhana College, Thane**  
*(Arts, Science & Commerce)*

**Department of Chemistry**  
**Certificate Course 2021-22 (CC16)**  
**Introduction and Application of Analytical Instruments**  
**Dr.G.R.Bhagure**



Certificate Course (CC16)

Ganesh B



Aditya K



Bhushan L



Ganesh B



DN





Bhushan L



Kalpana R



Shivani B



Latika Kathait



Sonali Kokane



Ganesh B



Rituraj



Hrishikes...




Farahat A



DN





Bhushan L 




Kalpana R



Shivani B




Latika Kathait 




Sonali Kokane



Ganesh B 




Rituraj 



Hrishikes... 



Farahat A 



DN



Organiser

Shivani Banerje  
Organiser

Participants

- Latika Kathait
- Sanket
- Adarsh Srivastava
- Aditya Khanna
- Aditya Sawant (16024)
- Akshay Wakde (10085)
- Anand Chouhan
- Anurag Dhumal
- Astha chavan(29)
- Bhushan Langi
- Chanchal Ya... On hold
- Diya pophalkar
- Dr.Rushirajeshwari Naik
- Farahat Anisari
- Ganesh Bhagure
- Gauri Singh
- Goddu sharma
- Hrishikesh parab
- Jyoti Yadav
- Kalpna Rathod
- mayuri waghere
- priya
- Priyanka Kirte
- Rituraj
- Riya Jaiswar (15784)
- Rohit Sonawane
- rounak mourya 25060
- Satu Chevan
- Shashikant Chinkate
- Simran Humbre
- Sneha Gore
- Snehal Kathole
- Sonali Kokane
- Srushti Naik (16151)
- Sufiya Shah.18984

3:22

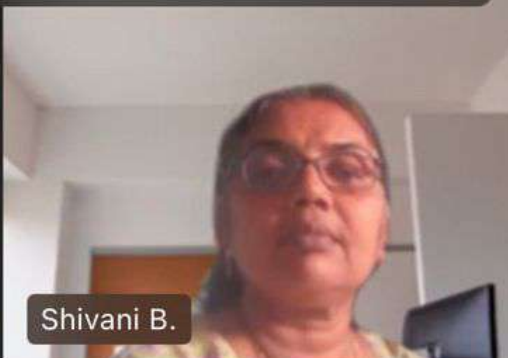


Certificate Course on "Intro..."

03:50



Sonali K.



Shivani B.



Ganesh B.



Bhushan L.



Kalpana R.



Latika K.



Hrishikesh p.



Farahat A.



Rituraj



SK





## Organiser



Shivani Banerjee  
Organiser



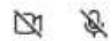
## Participants



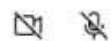
Latika Kathait



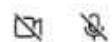
Aditya Sawant (16024)



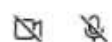
Ankit Kumawat



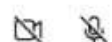
Anurag Dhumal



Bhavana Koli



Diya pophalkar



Geeta B Jadhav



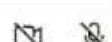
Jyoti Yadav



Maheshwari Patil



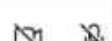
mayuri waghere



Pranali Ranshur



Priyanka Kirte



Rituraj



Riya Jaiswar (15784)



rounak mourya 25060



Sarvesh Jain (15123)



Shashikant Chinkate



Simran Humbre



Sneha Gore



Snehal Kathole



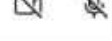
Srushti Naik (16151)



Sufiya Shah. 18984



vishwajeet p... On hold




Yashvardhan dhaware




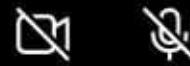
← In the meeting (23)



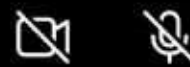
 Shweta Shrimal

 Aditya Sawant (1602)

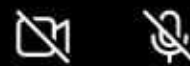
 Akshay Wakde (10085)




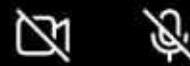
 Anand Chouhan 04



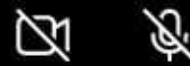
 Ankit Kumawat



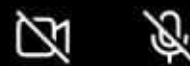
 Bhavana Koli




 Geeta B Jadhav




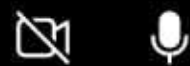
 Guddu sharma




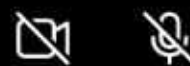
 Harshali misal (8690)




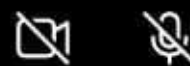
 Kalpana Rathod




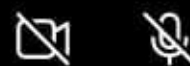
 Latika Kathait



 Maheshwari Patil



 Mariya Hashmi



← In the meeting (23)



Latika Kathait



Maheshwari Patil



Mariya Hashmi



mayuri waghere



Pranali Ranshur



Rituraj



rounak mourya 25060



Sahil.15289



Sarvesh Jain (15123)



Simran Humbre



Sneha Gore



Srushti Naik (16151)



Sufiya Shah.18984































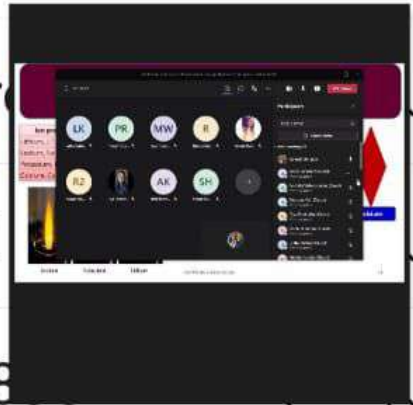


# In the meeting (...)



Mute all

- BK** Bhavana Koli(Guest)  
- DP** Diya Pophalkar(Gu...  
- GJ** Geeta B Jadhav(Gu...  
- LK** Latika Kathait(Gue...  
- MH** Mariya Hashmi (Gu...  
- MW** mayuri waghere(G...  
- PR** Pranali Ranshur(G...  
- R** Rituraj(Guest)  
-  Riya Jaiswar (1578...  
- R2** rounak mourya 250...  
- SH** Simran Humbre  
-  Srushti Naik (1...  
- SS** Sufiya Shah.18  





# In the meeting (...)



Mute all



Ganesh Bhagure



Ankit Kumawat(Gu...



Anshika Vishwakar...



Bhavana Koli(Guest)



Diya Pophalkar(Gu...



Geeta B Jadhav(Gu...



Latika Kathait(Gue...



Mariya Hashmi (Gu...



mayuri waghere(G...



Pranali Ranshur(G...



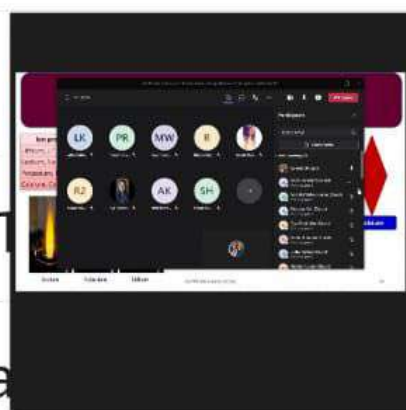
Rituraj(Guest)



Riya Jaiswar (T



rounak mourya



Tap to return to meeting 01:37:07



In the meeting (15)



Mute all

- |  |                       |         |  |
|--|-----------------------|---------|--|
|  | Pranali Ranshur       |         |  |
|  | Anurag Dhumal         |         |  |
|  | mayuri waghere        |         |  |
|  | Mrunmayi Dhage.188... |         |  |
|  | Priti shinde          |         |  |
|  | Rituraj               |         |  |
|  | Riya Jaiswar (15784)  |         |  |
|  | Rupali isamantri      |         |  |
|  | Rutuja Padwal         |         |  |
|  | Sahil.15289           | On hold |  |
|  | Sayali Deshmukh       |         |  |
|  | Simran Humbre         |         |  |
|  | Sneha Gore            |         |  |
|  | Sonali Kokane         |         |  |
|  | Sufiya Shah.18984     |         |  |

Tap to return to meeting 01:37:07



In the meeting (15)



Mute all

- |  |                       |         |  |
|--|-----------------------|---------|--|
|  | Pranali Ranshur       |         |  |
|  | Anurag Dhumal         |         |  |
|  | mayuri waghere        |         |  |
|  | Mrunmayi Dhage.188... |         |  |
|  | Priti shinde          |         |  |
|  | Rituraj               |         |  |
|  | Riya Jaiswar (15784)  |         |  |
|  | Rupali isamantri      |         |  |
|  | Rutuja Padwal         |         |  |
|  | Sahil.15289           | On hold |  |
|  | Sayali Deshmukh       |         |  |
|  | Simran Humbre         |         |  |
|  | Sneha Gore            |         |  |
|  | Sonali Kokane         |         |  |
|  | Sufiya Shah.18984     |         |  |

Tap to return to meeting 01:22:56



In the meeting (19)



Mute all

- |    |                              |  |  |
|----|------------------------------|--|--|
| AK | Aditya Khanna                |  |  |
| AK | Ankit Kumawat(Guest)         |  |  |
| AV | Anshika Vishwakarma(Guest)   |  |  |
| AC | Astha Chavan(29) (Guest)     |  |  |
| DG | Dhanashree Gawali (External) |  |  |
| JM | Jeenal macwan (Guest)        |  |  |
| LK | Latika Kathait(Guest)        |  |  |
| MP | Maheshwari Patil (Guest)     |  |  |
| MH | Mariya Hashmi (Guest)        |  |  |
| MW | mayuri waghere(Guest)        |  |  |
| PR | Pranali Ranshur(Guest)       |  |  |
| R  | Rituraj(Guest)               |  |  |
|    | Riya Jaiswar (15784)         |  |  |
| R2 | rounak mourya 25060(Guest)   |  |  |
| RP | Rutuja Padwal(Guest)         |  |  |
| SD | Sayali Deshmukh(Guest)       |  |  |
| SB | Shifa Bhendwade (15187)      |  |  |
|    | Srushti Naik (16151)         |  |  |
| SS | Sufiya Shah.18984            |  |  |





Leave

## Participants



Type a name



In this meeting (18)



Satu Chavan



Aishwarya Mane (Guest)  
Meeting guest



Anurag Dhumal (Guest)  
Meeting guest



Astha Chavan(29) (Guest)  
Meeting guest



Bhavana Koli (Guest)  
Meeting guest



Divya Chougule (Guest)  
Meeting guest



Latika Kathait (Guest)  
Meeting guest



Maheshwari Patil (Guest)  
Meeting guest



Mariya Hashmi (Guest)  
Meeting guest



mayuri waghare (Guest)  
Meeting guest



Pranali Ranshur (Guest)  
Meeting guest



Rituraj (Guest)



Haze



ENG

17:13

18-12-2021



2



Leave

## Participants



Type a name



Rituraj (Guest)

Meeting guest



Riya Jaiswar (15784)



rounak mourya 25060 (Guest)

Meeting guest



Rutuja Padwal (Guest)

Meeting guest



Shifa Bhendwade (15187)



Sneha Gore (Guest)

Meeting guest



Sufiya Shah.18984



Others from chat (17)



Shivani Banerjee



Kamlesh Pradhan

Request to join



Manasi Pradhan



Mrunal Bakane



Sonali Kokane

haze



ENG

17:13

18-12-2021



2



# Certificate of Completion

## DNYANASADHANA, THANE (SOCIETY)

EST.: 1980 (Reg. No. MAH / 759/ THN)

This is to certify that Mr/Ms Shifa Khalid Bhendwade  
of T.Y.B.Sc. class has successfully completed the Certificate Course in  
Introduction and Application of Analytical Instruments  
with O grade, conducted by the Department of Chemistry  
from 09/12/2021 to 20/12/2021.

Date: 21/12/2021

*Edheod*

**Course Coordinator**

*Somus*

**IQAC Coordinator**

*H. D. D. D.*

**I/c Principal**

*Pradhan*

**Secretary,  
Dnyanasadhana Trust**



**SATISH PRADHAN DNYANASADHANA COLLEGE, THANE  
(ARTS, SCIENCE AND COMMERCE)  
DEPARTMENT OF CHEMISTRY**

**Certificate course  
2021-22**

**Course Code: SPDC CC16**

**INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS**

**From 09<sup>th</sup> December, 2021 to 20<sup>th</sup> December, 2021**

**Timings :3.00 pm to 6.00pm**

**Description:**

This course will provide students with a background in modern analytical chemistry with an emphasis on instrumentation. Methods and applications of instrumental analytical chemistry in environmental monitoring, forensics and materials science will also be presented.

**Eligibility: All chemistry undergraduate and post graduate students**

**Objectives:**

*To enable students*

*Acquire knowledge about the widely used analytical Instruments*

*Learn specific technique employed for monitoring different pollutants in air and water.*

*Know the instruments used for environmental pollution monitoring.*

*Reinforce chemical principles central to analytical chemistry.*

*Introduce instrumental techniques for chemical measurement.*

*Develop critical thinking for interpreting analytical data.*

*Select instrumentation appropriate to the measurement need.*

**Duration :**

Certificate course will be of 10 days -30 hours- consisting of lectures, hands on experience of handling and operating the instruments, discussions, preparation & submission of project work, internal assessment, mcq test and feedback.

**Syllabus and resource persons**

<b>Modules</b>	<b>Topics and syllabus</b>	<b>Date</b>	<b>No. of Hours</b>	<b>Resource person</b>
<b>1</b>	<b>Introduction to analytical instrumentation</b>	<b>09/12/21</b>	<b>03</b>	<b>Inauguration By HOD of Chemistry department : Dr Shivani Banerjee Brief introduction of the course : Coordinator : Dr Kalpana Rathod Resource speaker: Dr G.R Bhagure</b>
<b>2</b>	<b>Classification- Analytical Instrumental methods:</b>	<b>10/12/21</b>	<b>03</b>	<b>Dr S.P Banerjee</b>
<b>3</b>	<b>Introduction And Principal Application of G.C-MS And HPLC-</b> <ul style="list-style-type: none"> <li>● Qualitative and quantitative analysis of organic compounds</li> <li>● Pollutant detection, dairy product and food analysis etc.</li> </ul>	<b>11/12/21</b>	<b>03</b>	<b>Dr K.R Rathod</b>

4	<b>Flame photometry:</b> Introduction And Application Sample preparation, Determination of Na,K,Li and Ca by Calibration Curve method in Blood, Soft drink (Thumps up/Coca-Cola) Sample , and Tomato chips (Lays) ..	13/12/21	03	Dr G.R Bhagure
5	<b>Introduction And Application of pH meter-</b> measurements of pH in Soil, Water and Health care products  Importance of pH measurements in agriculture, Environmental and Healthcare and Clinical field.	14/12/21	03	Dr B.P Langi
6	<b>Colourimetry- applications of instrumental analysis:</b>	15/12/21	Dr S.S Kokane	Dr S.S Kokane
7	<b>Conductometry- applications of instrumental analysis.</b>	16/12/21	03	Dr F.J.Khan
8	<b>A concise review :</b> On various Analytical instruments and applications-Tracing antibiotics,microorganisms in food,air pollutant soap in oil etc.	17/12/21	03	Mr Satu Chavan
9	<b>Role of computers in analytical instrumentation</b>	18/12/21	03	Mr A.S.Khanna
10	<b>Introduction to Mass Spectrometer.</b>	20/12/21	03	Dr S.S Kokane

<b>Test on Certificate course</b>			<b>MCQ test</b>
			<b>Valedictory function</b>
			<b>Feed back</b>

### **Further Readings**

1. Vogel's Textbook of Quantitative Chemical Analysis, 5th Ed., By G.H. Jefferey, J. Bassett, J. Mendham, and R.C. Denney, ELBS – Longman.
2. Fundamentals of Analytical Chemistry, 7th Ed., By D.A. Skoog, D.M. West and F.J. Hooler, Sounders College Publishing.
3. Quantitative Analysis, 5th Ed., by R.A. Day, Jr. and A.L. Underwood, Prentice – Hall of India.
4. Basic Concepts of Analytical Chemistry, 2nd Ed., By S.M. Khopkar, New Age Publishers.
5. Comprehensive Analytical Chemistry, Vol. IA, Edited By C.L. Willson and D.W. Wilson, Elsevier Publishing Company

**Dr S.P.Banerjee**

**Head Department of Chemistry .**

**Dr. K.R. Rathod**

**Coordinator**



**SATISH PRADHAN DNYANASADHANA COLLEGE, THANE**  
**(ARTS, SCIENCE AND COMMERCE)**  
**DEPARTMENT OF CHEMISTRY**  
**Certificate course**  
**2021-22**

**INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS**

**Schedule of the Course**

Modules	Topics and syllabus	Date	No. of Hours	Resource person
1	Introduction to analytical instrumentation	09/12/21	03	Inauguration By HOD of Chemistry department : Dr Shivani Banerjee Brief introduction of the course Coordinator Dr Kalpana Rathod Resource speaker: Dr G.R Bhagure
2	Classification-Analytical Instrumental methods:	10/12/21	03	Dr S.P Banerjee
3	Introduction And Principal Application of G.C-MS And HPLC- <ul style="list-style-type: none"><li>● Qualitative and quantitative analysis of organic compounds</li><li>● Pollutant detection, dairy product and food analysis etc.</li></ul>	11/12/21	03	Dr K.R Rathod
4	Flame photometry: Introduction and Application Sample preparation, Determination of Na, K, Li and Ca by Calibration Curve method in Blood, Soft drink (Thumps up/Coca-Cola) Sample, and Tomato chips (Lays)	13/12/21	03	Dr G.R Bhagure



5	Introduction And Application of pH meter- measurements of pH in Soil, Water and Health care products Importance of pH measurements in agriculture, Environmental and Healthcare and Clinical field.	14/12/21	03	Dr B.P Langi
6	Colourimetry- applications of instrumental analysis:	15/12/21	Dr S.S Kokane	Dr S.S Kokane
7	Conductometry- applications of instrumental analysis.	16/12/21	03	Dr F.J.Khan
8	A concise review :On various Analytical instruments and applications-Tracing antibiotics,microorganisms in food,air pollutant soap in oil etc.	17/12/21	03	Mr Satu Chavan
9	Role of computers in analytical instrumentation	18/12/21	03	Mr A.S.Khanna
10	Introduction to Mass Spectrometer.	20/12/21	03	Dr S.S Kokane
Test on Certificate course				MCQ test
				Valedictory function
				Feed back

**Dr S.P. Banerjee**  
Head Department of Chemistry

**Dr. K.R. Rathod**  
Coordinator

# **Satish Pradhan Dnyanasadhana College, Thane**

## **Department of Chemistry**

### **Descriptive Report of the Program**

#### **‘INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS’**

The Department of Chemistry organized an online certificate course titled ‘INTRODUCTION AND APPLICATION OF ANALYTICAL INSTRUMENTS’ under the guidance of our H. O. D. Dr. Shivani Banerjee and course co-ordinator Dr. Kalpana Rathod.

The certificate course was conducted on MS Teams from 9<sup>th</sup> December 2021 to 20<sup>th</sup> December 2021. The duration of the course was 30hr. 97 students registered for the course. Inauguration of Certificate Course began with Dnyanasadhana Geet. Chief resource person for the certificate course Dr. G. R. Bhagure who delivered a talk on Analytical instrumentation and its day-to-day applications.

The course was designed with the four-quadrant Approach, the Components which are e- Tutorial, e-Content, Discussion and Assessments. The course was divided into Ten modules of Three Hours each, Inclusive of the assignment and objective type Assessment at the end of the Module.

Departmental faculties, Dr. Shivani Banerjee, Dr. Kalpana Rathod, Dr. Ganesh Bhagure, Dr. Sonali Kokane, Dr. Bhushan Langi, Ms. Farahat Khan, Mr. Aditya Khanna Mr. Sattu Chavan were the resource persons for the various modules of the certificate course. All the resource persons gave us a new insight on the different instrumentation and its application. Many Instrumentation and applications like G.C-MS And HPLC, Flame photometry, pH metry, Colorimetry, Conductometry, Mass Spectrometry were included in the curriculum. Computers and chemistry blending was also a part of the discussion.

A multiple-choice questions-based test was conducted at the end so that students can evaluate themselves. Feedback link was shared to students which gave us an insight to update and to overcome our shortcomings and head towards betterment for our next course. Indeed, the course was very participative, innovative, informative, useful and we sincerely hope that the course has motivated many participants to seek and learn instrumentation and applications of various instruments and help them to enrich their CV amongst their fellow counterparts.

#### **Acknowledgement**

Department of Chemistry is very grateful to our honorable President Satish Pradhan, Secretary Shri Kamlesh Pradhan, Joint Secretary Mrs. Manasi Pradhan, Treasurer Shri Satish Seth, In-charge Principal Dr. Hemant Chitte, Vice Principals and departmental colleagues.