

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

DEPARTMENT OF CHEMISTRY

Certificate Course Analytical Techniques

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 Analytical Techniques

Report 2019-2020

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Certificate course in Analytical Techniques

Duration: 32 hours

<u>Aim:</u> To study basic analytical techniques required in industry. (Preliminary)

Features of the course:

- •Basic concepts of analytical techniques.
- Customized for the industry.
- Delivered by faculty of department of chemistry as well as experts from the industry.

Objectives:

- To acquire knowledge about different analytical techniques.
- To acquire the skills required in industries.
- To understand basic laboratory techniques.

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: 15th 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 Analytical Techniques (F.Y.B.Sc.)

Respected Sir,

For developing instrumental skills in students, we have designed certificate course for the class of F.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 Analytical Techniques for F.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

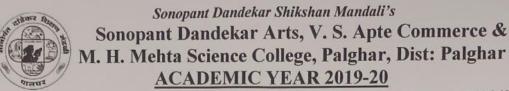
Dr. Suhas Janwadkar

Head, Department of Chemistry

SYLLABUS

| | Content | Theoretical | Practical | Duration |
|---|--|----------------------------------|---|------------|
| 1 | General chemical | -Concept of | Problem-solving based on | 4 Hours |
| | calculation & | Normality, | the theoretical concepts. | |
| | representation of | Molarity, | | |
| | Graphs- I. | Formality, | | |
| | | -Conversion of | | |
| | | unit | | |
| 2 | Study of Laboratory | -Importance of | Techniques to handle | 4 Hours |
| | techniques | handling | pipette, burette, standard | |
| | | glassware | volumetric flask, use of | |
| | | apparatus. | rubber bulb. | |
| | | -Calibration of | Cleaning and maintenance | |
| | | apparatus. | of apparatus. | |
| | | -Accurate | | |
| | | weighing of | | |
| 2 | Duo ati a al la a uni una a | compounds. | Due etical learning and | 4 Ha |
| 3 | Practical learning on | -Good laboratory | Practical learning on | 4 Hours |
| | laboratory safety | practices | laboratory safety by | |
| | | Laboratory | demonstration and handling of instruments and | |
| | | upkeep | | |
| 4 | Training on handling | Laboratory | apparatus. Demonstration and handling | 4 Hours |
| 4 | Training on handling and safety of | -Laboratory health and safety | of chemicals. | 4 110018 |
| | chemicals | | of chemicals. | |
| 6 | Preparation of | | 1. For Acid -Base Titration – | 10 Hours |
| U | Standard solution | | Succinic acid, benzoic acid | 10 Hours |
| | such as Primary | | by using NaOH. | |
| | standard and | | For Complexometric | |
| | secondary standard | | Titration – ZnSO ₄ by using | |
| | secondary standard | | EDTA. | |
| | | | For Redox Titration- Oxalic | |
| | | | acid/Na-oxalate using | |
| | | | KMnO _{4.} | |
| | | | | |
| | | | 2. Standardization of | |
| | | | commercial sample of HCl | |
| | | | by using Borax. | |
| | | | | |
| | | | 3. Standardization of | |
| | | | KMnO ₄ by Na- | |
| | | | oxalate/Oxalic acid. | |
| 7 | Qualitative analysis | | 1.Estimation of purity of | 6 Hours |
| • | and the same of th | | given EDTA sample. | 2 _ 10 010 |
| | | | | |

| | Zinc-oxide cream by complexometrically. 3. Assay of H ₃ PO ₄ by acid- | |
|-----------------|--|----------|
| | base titration. Assay of salicylic acid. | |
| Total Duration: | | 32 hours |



Date: 5/10/2019

NOTICE

All the **F.Y.B.Sc.** students are hereby informed that their **Certificate Course** in **Analytical Techniques** will begin from 4th November, 2019. Batch details are shared along with this notice.

Dr. Suhas Janwadkar

Head ,Department of Chemistry

ENROLLMENT LIST

STUDENT ENROLMENT LIST

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| 48 | VISHWAKARMA NIRAJ ANUPKUMAR |
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| 59 | MULLA SALMAN JAKIRHUSEN |
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| 63 | SHEJWAL RUSHIKESH SANJAY |
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ATTENDANCE REPORT

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| 142 | SHAIKH AALIYA ABDUL LATIF | Ade. | My. | Aday. | Aguy. | Ada | Ada. | AND. | | Adv. | Adu | +0 | 100 |
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| 140 | | VALIDA | | | | | | | 1 | 1 | | | 11.1 |
| 150 | | Nathau | Natha | Harris | NAME | NAME | NAME | NAME | North | NAME | HAND | NB | NAME |

COMPLIANCE REPORT

Certificate Course in Analytical Techniques was conducted for the students of F.Y.B.Sc. Students were trained for basic handling of apparatus, chemical calculations, preparation of standard solutions.

A certificate course in analytical techniques provide 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: 30/11/2019

Number of students enrolled for the course: 150

Number of students completed the course: 150

Duration of the course: 32 hours

Dr. Suhas Janwadkar

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: Mande Kar. Mansi Sanjay | |
|-------------------------------|----------|
| Class: FYBSC | 30/11/19 |
| 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. | | 79- | | | |
| 3 | The teacher communicated clearly and effectively | | | | | |
| 4 | The teacher encouraged feedback, class participation and interaction | | | | | |
| 5 | The course started and ended on schedule | | | | | |
| 6 | Course objectives were clearly presented | | | | | |
| 7 | Course material was well prepared | | | | | |
| 8 | The course developed my understanding of concepts and principles | | | | | |

M.M.S Signature of student



ASST. PROF. ANISHKUMAR DUBEY EXPLAINING LABORATORY TECHNIQUES

SAMPLE CERTIFICATES

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. YADAV ANJALI R. had successfully completed

Certificate Course in Analytical Techniques

Head
Department of Chemistry

MD ohmukh CFEI - Chairman

PAIGHAR SO OIST PRICHAR SO

PRINCIPALINCIDAL
SOLIDAND Dandekar Arts College.
N.H. Mehas Science Coffee
PALGHAR (W.R.)
Dist. Palghar, Pin-461404

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

Mr. SANKHE NILAY U. had successfully completed

ortificate Course in Applytical Technique

Certificate Course in Analytical Techniques

Head
Department of Chemistry

MDeshmukh

CFEI - Chairman

PAIGHAR SELECTION OF SELECTION OF SELECTION OF SERECTION OF SERECTION

PRINCIPAL Society of the State Science Coffee & M.H. Mehra Science Coffee PALGHAR (W.R.)

DATE:12/02/2020

SONOPANT DANDEKAR SHIKSHAN MANDALI'S

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

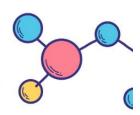
CERTIFICATE

OF COMPLETION

This is to certify that

Ms. PATIL ISHA VILAS had successfully completed

Certificate Course in Analytical Techniques



Head
Department of Chemistry

MD ohmukh CFEI - Chairman

PAUGHAR OST, PAUGH

PRINCIPALINCIPAL
Sosopart Dandekar Arts College.
V.S. Apte Commerce College &
M.H. Mehts Science Coffege
PALIGHAR (W.R.)
Dist. Palshar, Pin-461404

DATE:12/02/2020