SECOND-YEAR OF MASTER OF SCIENCE ANALYTICAL CHEMISTRY REVISED SYLLABUS ACCORDING TO CBCS NEP2020

COURSE TITLE: ANALYTICAL CHEMISTERY PRACTICAL-I
SEMESTER-III
W.E.F. 2024-2025

RECOMMENDED BY THE BOARD OF STUDIES IN CHEMISTRY
AND
APPROVED BY THE ACADEMIC COUNCIL

Devrukh Shikshan Prasarak Mandal's
Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh.
Tal. Sangameshwar, Dist. Ratnagiri-415804, Maharashtra, India

Academic Council Item No:

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangameshwar, Dist. Ratnagiri-415804,
Name of the Parent University	:	University of Mumbai
Name of the Programme	:	Master of Science
Name of the Department	:	Chemistry
Name of the Class	:	Second Year
Semester	:	third
No. of Credits	:	02
Title of the Course	:	Analytical Chemistry Practical-I
Course Code	:	S607CHP
Name of the Vertical in adherence to NEP 2020	:	Elective
Eligibility for Admission	:	Chemistry Graduate learner seeking Admission to Post Graduate Programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra
Passing Marks	:	40%
Mode of Assessment	:	Summative at the end of semester
Level	:	PG
Pattern of Marks Distribution for SEE	:	100 %
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2024-2025
Ordinances /Regulations (if any)		

Syllabus for Second Year of Master of Science in Chemistry

(With effect from the academic year 2024-2025)

SEMESTER-III **Paper No.-VI**

Course Title: Analytical Chemistry Practical –I **No. of Credits - 2**

Type of Vertical: Elective **Course Code: S607CHP**

Learning Outcomes Based on BLOOM's Taxonomy:

After completing the course, the learner will be able to…		
Course Learning Outcome No.	Blooms Taxonomy	Course Learning Outcome
CLO-01	Apply	Calculate total reducing sugar in honey and lactose content in milk and iodine value of oil samples
CLO-02	Analyse	Analyze alcoholic beverages and water sample
CLO-03	Evaluate	Estimate the amount of metals present in different alloy and ore.
CLO-04	Evaluate	Estimate amount of caffeine, vitamin C in analyte solution.

Syllabus for Second Year of Master of Science in Chemistry

(With effect from the academic year 2024-2025)

SEMESTER-III **Paper No.-VI**

Course Title: Analytical Chemistry Practical –I **No. of Credits - 2**

Type of Vertical: Elective **Course Code: S607CHP**

COURSE CONTENT			
Module No.	**Content**	**Credits**	**No. of Hours**
1	**Practicals** **GROUP: A** • Total reducing sugars before and after inversion in honey using: (a) Cole's Ferricyanide (b) Lane - Eynon method. • Analysis of lactose in milk • Estimation of Caffeine in tea • Estimation of Vitamin C in lemon Juice/squash by Dichlorophenol-indophenol method • Iodine value of oil / fat • Analysis of alcoholic beverages (Beer) for alcohol content by distillation followed by specific gravity method, acidity by titration, total residue by evaporation. **GROUP: B**	**1**	**30**
2	• To analyze Pyrolusite for: Fe by colorimetry and / or Mn by volumetry. • To analyze Magnelium for Mg by complexometry. • Analysis of Bauxite for Ti by colorimetry / Al by gravimetry / Fe (volumetry) • Analysis of water sample: Total hardness and salinity. • Analysis of water sample: Acidity and sulphate (Benzidine method).	**1**	**30**
	Total	**2**	**60**

Access to the Course

The course is available for second year students admitted for Master of Science.

Methods of Assessment

Vocational Skill Courses, Skill Enhancement Courses and the courses having laboratory sessions shall be assessed at the end of each semester.

References:

1. Vogel's textbook of quantitative chemical analysis, Sixth Ed. Mendham, Denny, Barnes, Thomas, Pearson education
2. Standard methods of chemical analysis, F. J. Welcher
3. Standard Instrumental methods of Chemical Analysis, F. J. Welcher
4. W. W. Scott "Standard methods of Chemical Analysis", Vol. I, Van Nostrand Company, Inc.,1939.
5. E. B. Sandell and H. Onishi, "Spectrophotometric Determination of Traces of Metals", Part II, 4th Ed., A Wiley Interscience Publication, New York, 1978.