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

COURSE TITLE: ANALYTICAL CHEMISTERY PRACTICAL
SEMESTER-IV
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	:	Two
No. of Credits	:	02
Title of the Course	:	Analytical Chemistry Practical
Course Code	:	S613CHP
Name of the Vertical in adherence to NEP 2020	:	Compulsory major
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-IV **Paper No.-IV**

Course Title: Analytical Chemistry Practical **No. of Credits - 02**

Type of Vertical: Compulsory Major **Course Code: S613CHP**

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 pKa value of H_3PO_4 acid potentiometrically
CLO-02	Understand	Estimate amount of Active detergent matter, alkalinity and Oxygen releasing capacity present in detergent sample.
CLO-03	Apply	Calculate amount of drug present in medicine.
CLO-04	Evaluate	Determine percentage purity of crystal violet indicator.

Syllabus for Second Year of Master of Science in Chemistry

(With effect from the academic year 2024-2025)

SEMESTER-IV **Paper No.-IV**

Course Title: Analytical Chemistry Practical **No. of Credits - 02**

Type of Vertical: Compulsory Major **Course Code: S613CHP**

COURSE CONTENT			
Module No.	**Content**	**Credits**	**No. of Hours**
1	Group –A • Determination of pKa value of H_3PO_4 potentiometrically • Estimation of Na+ in dairy whitener by flame photometry • Spectrophotometric determination of pH of buffer solution. • Analysis of water sample : Mn2+ by colorimetric method • Estimation of Glucose by Folin-Wu method • To analyze Bronze for Zn by complexometric method	**1**	**30**
2	Group –B • Analysis of drugs by non -aqueous titration: Glycine , Sodium Benzoate • Analysis of detergents: Active detergent matter, alkalinity and Oxygen releasing capacity • Determination of the purity of crystal violet • Estimation of Ca in Ca-pentathonate/calcium lactate tablet • Analysis of Calcium, Iron and phosphorous in milk. • Determination of SAP value of oil. • Estimation of Aldehyde in lemon grass oil / Cinnamon oil.	**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.