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

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COURSE TITLE: TERNARY MIXTURE ANALYSIS  
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	:	Ternary Mixture Analysis
Course Code	:	S604CHP
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 and CIA	:	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.- IV**

**Course Title: Ternary Mixture Analysis**

**No. of Credits: 02**

**Type of Vertical: Compulsory Major**

**COURSE CODE: S604CHP**

**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	Analyse	separate ternary mixture using physical and chemical methods.
CLO-02	Evaluate	determine mass and melting point of the purified product.
CLO-03	Create	prepare derivative of separated organic compound

## Syllabus for Second Year of Master of Science in Chemistry

(With effect from the academic year 2024-2025)

**SEMESTER-III**

**Paper No.- IV**

**Course Title: Ternary Mixture Analysis**

**No. of Credits: 02**

**Type of Vertical: Compulsory Major**

**COURSE CODE: S604CHP**

COURSE CONTENT			
Module No.	Content	Credits	No. of Hours
1	<ul style="list-style-type: none"><li>○ <b>Separation of a ternary mixture</b> of organic compounds and identification including derivative preparations using micro-scale technique 1. Separation of a ternary mixture (S-S-S, S-S-L, S-L-L and L-L-L) (for solid mixture: water insoluble/ soluble including carbohydrates) based upon differences in the physical and the chemical properties of the components.</li><li>○ <b>Identification</b> of the two components (indicated by the examiner) using micro-scale technique.</li><li>○ <b>Preparation of derivatives</b> (any one of separated compound).</li></ul>	02	60
<b>Total</b>		<b>02</b>	<b>60</b>

### Access to the Course

The course is available for all the students admitted for Second Year of Master of Science.

### Methods of Assessment

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

### References:

1. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis- V.K. Ahluwalia and Renu Aggarwal, Universities Press India Ltd., 2000
2. Advanced Practical Organic Chemistry – N. K. Vishnoi, Third Addition, Vikas Publishing House PVT Ltd.

*Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)*

3. Systematic Laboratory Experiments in Organic Synthesis- A. Sethi, New Age International Publications.
4. Systematic Identification of Organic compounds, 6th edition, R. L. Shriner, R. C. Fuson and D.Y. Curtin Wiley, New York.
5. Vogel's Textbook of Quantitative Analysis, revised, J. Bassett, R. C. Denney, G. H. Jeffery and J. Mendham, ELBS
6. Experiments and Techniques in Organic Chemistry, D. Pasto, C. Johnson and M. Miller, Prentice Hall
7. Macro-scale and Micro-scale Organic Experiments, K. L. Williamson, D. C. Heath.
8. Systematic Qualitative Organic Analysis, H. Middleton, Adward Arnold.
9. Handbook of Organic Analysis- Qualitative and Quantitative, H. Clark, Adward Arnold.
10. Vogel's Textbook of Practical Organic Chemistry, Fifth edition, 2008, B.S.Furniss, A. J.Hannaford, P. W. G. Smith, A. R. Tatchell, Pearson Education.
11. Laboratory Manual of Organic Chemistry, Fifth edition, R K Bansal, New Age Publishers.
12. Organic structures from spectra, L. D. Field, S. Sternhell, John R. Kalman, Wiley, 4th ed., 2011.