



**THIRD-YEAR OF BACHELOR OF SCIENCE
CHEMISTRY (MAJOR)
REVISED SYLLABUS ACCORDING TO CBCS
NEP2020**

**COURSE TITLE: CHEMISTRY PRACTICAL-II
SEMESTER-V
W.E.F. 2025-2026**

**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: 02/2025

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	:	Bachelor of Science
Name of the Department	:	Chemistry
Name of the Class	:	Third Year
Semester	:	Fifth
No. of Credits	:	02
Title of the Course	:	Practical-II
Course Code	:	S305CHP
Name of the Vertical in adherence to NEP 2020	:	Major
Eligibility for Admission	:	Any student admitted to Third Year of B.Sc. Degree 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	:	5.5
Pattern of Marks Distribution for SEE and CIA	:	100 %
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2025-2026
Ordinances /Regulations (if any)		

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

Syllabus for Third Year of Bachelor of Science in Chemistry

(With effect from the academic year 2025-2026)

SEMESTER-V

Paper No.– II

Course Title: Practical-II

No. of Credits - 02

Type of Vertical: Major

COURSE CODE: S305CHP

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	determine percentage purity of given water soluble salt by complexometric titration.
CLO-02	Analyse	analyse given water-soluble salt for added cation and/or anion.
CLO-03	Create	synthesize inorganic complexes and derivatives of organic compounds.

Syllabus for Third Year of Bachelor of Science in Chemistry

(With effect from the academic year 2025-2026)

SEMESTER-V

Paper No.– II

Course Title: Practical-II

No. of Credits - 02

Type of Vertical: Major

COURSE CODE: S305CHP

COURSE CONTENT			
Sr. No.	Content	Credits	No. of Hours
1	Inorganic Chemistry I. Inorganic preparations 1. Preparation of Potassium diaquo bis(oxalato) cuprate (II) 2. Preparation of Ferrous ethylene diammonium sulphate. 3. Preparation of bisacetylacetonatocopper (II) II. Determination of percentage purity of the given water-soluble salt and qualitative detection w.r.t added cation and/or anion (qualitative analysis only by wet tests). (Any three salts of transition metal ions)	02	60
2	Organic Chemistry Preparation of Derivatives 1. Oxime derivative of aldehydes or Ketones 2. Aryloxyacetic acid of Phenol 3. 2, 4 DNP derivative of aldehydes or Ketones 4. Acetyl derivative of Aniline by using Zn dust / Acetic acid 5. Benzylidene derivative of primary aromatic amine 6. Anilide derivative of acid 7. Amide derivative of acid		
	Total	02	60

Access to the Course

The course is available for all the students admitted for Third Year Bachelor of Science.

Methods of Assessment

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

References:

1. Vogel Textbook of Quantitative Chemical Analysis G.H. Jeffery, J. Basset.
2. Advanced experiments in Inorganic Chemistry., G. N. Mukherjee., 1st Edn., 2010., U.N. Dhur & Sons Pvt Ltd.
3. Vogel's. Textbook of. Macro and Semimicro qualitative inorganic analysis. Fifth edition.
4. Practical Inorganic Chemistry by G. Marr and B. W. Rockett, Van Nostrand Reinhold Company London 1972. P 34. (For synthesis of iron ethylenediamine sulphate)
5. D. F. Shriver and P. W. Atkins, Inorganic chemistry, 3rd Ed., Oxford University Press, (1999).
6. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
7. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000). Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
8. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic chemistry, 5th Ed., Pearson (2012)
9. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., Textbook of Practical Organic Chemistry, Prentice-Hall, 5th edition, 1996.
