



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

**COURSE TITLE: POLYMER CHEMISTRY PRACTICAL
SEMESTER-VI
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	:	Sixth (VI)
No. of Credits	:	02
Title of the Course	:	Polymer Chemistry Practical
Course Code	:	S318CHP
Name of the Vertical in adherence to NEP 2020	:	Elective
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-VI

Paper No. IV

Course Title: Polymer Chemistry Practical

No. of Credits - 02

Type of Vertical: Elective-II

COURSE CODE: S318CHP

Learning Outcomes Based on BLOOM's Taxonomy:

After Completing the Programme, Student will be able to,

Bloom Level	CO No.	Course Outcome
Apply	CO1	prepare different types of polymers by various methods.
Apply	CO2	characterise the polymers by instrumental methods such as IR and DSC.
Apply	CO3	Estimate hydroxyl groups, amount of nitrogen, ammonia, rubber content, etc in polymers.

Syllabus for Third Year of Bachelor of Science in Chemistry

(With effect from the academic year 2025-2026)

SEMESTER-VI

Paper No.– IV

Course Title: Polymer Chemistry Practical

No. of Credits - 02

Type of Vertical: Elective-II

COURSE CODE: S318CHP

COURSE CONTENT			
Module No.	Content	Credits	No. of Hours
1	Practicals on Polymer Chemistry 1. Determination of hydroxyl number of a polymer using colorimetric method. 2. Microscale Emulsion Polymerization of Poly(methylacrylate) 3. Qualitative analysis of plastic and rubber 4. Preparation of polyacrylamide and its electrophoresis 5. IR studies of polymers 6. DSC analysis of polymers 7. Determination of ammonia content, total solid content, dry rubber content, KOH number, acid value, iodine value, 8. Estimation of hydroxyl groups, estimation of nitrogen in polymers.	02	60
	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. Handbook for analysis of synthetic polymer and plastics, J. Urbanski, W. Czerwinski, K. Janicka et al., Ellis Harwood Ltd
2. Polymer Science by V. R. Gowarikar, N. V. Visvanathan, Jaydev Shreedhar, New Age International Ltd. Publisher 1996. (Reprint 2012)
3. Textbook of Polymer Science by Fred Billmeyer, 3rd Edn. John Wiley and Sons New York 1984. (Reprint 2008)
4. Introductory Polymer Chemistry by G. S. Misra New Age International (P) Ltd. Publisher 1996.
5. Polymer Chemistry by Charles E. Carraher (Jr.), 6th Edn, (First Indian Print 2005), New York-Basel.
6. Inorganic Polymers by G. R. Chatwal Himalaya Publishing House 1st Edn. 1996
7. Polymer Science—A Text Book by V. K. Ahluwalia, Anuradha Mishra.
8. Principles of Polymer Science by P. Bahadur, N. V. Sastry, 2nd Edn, Narosa Publishing House.
9. Polymer Chemistry by Ayodhya Singh, 2008, Published by Campus Book International, New Delhi.
10. Organic Polymer Chemistry by Jagdamba Singh, R. C. Dubey, 4th Edn, 2012.
11. Advanced Polymer Chemistry by V. K. Selvaraj, 1st Edn, 2008, Published by Campus International, New Delhi.
12. Organic Polymer Chemistry by V. Jain, IVY Publishing House, New Delhi.
13. Principles of Polymerization by George Odian 3rd Edn. John Wiley & Sons New York.