

Branch Name:	B.Sc. Chemistry
Program Code:	SC103
Course Name:	Advance Polymer chemistry
Course Code:	2SC1030621
Pre-requisite Course:	Fundamentals of Chemistry (up to S.Y. B.Sc.)

Course Objectives:

1. To meet the growing demand of Advanced Courses in Industrial chemistry.
2. To help the colleges to update and modernize their laboratories.
3. To redesign the courses the special emphasis on local requirements, environment, to link the Courses with requirements of the industries and research.
4. Comprehension of principles of industrial chemistry and learning of current applications.
5. The primary goal of this course is to make students aware of how chemical process can be designed, developed and employed in a sustainable manner.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme(Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical(Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
2	--	-	2	35	15	-	-	50

Subject Contents:

Sr. No	Topic	Lectures	Weightage
1	Introduction of Polymers Classification and Nomenclature of polymers, Isomerism of polymers, Chain growth polymerization – Introduction, Mechanism of free-radical, Cationic and Anionic polymerization, Kinetics of free radical, Cationic and Anionic polymerization, Mechanism and Kinetics polycondensation ,Introduction and applications of bio-polymers.	16	50%
2	Polymer technology Polymerization Techniques, Concept of Averages: (M_n), (M), (M^w) Degree of polymerization, Poly dispersity and molecular weight distribution, Methods for determination of molecular weight: Membrane Osmometry, Viscometry, Light Scattering, GPC.	16	50%

Course Outcomes:

- ❖ Students can understand the atomic and molecular basis of Physical chemistry.
- ❖ They can know the impact of Physical chemistry on the fields of medicine, pharmacy and its impact on the global economy.

- ❖ Are capable to identify chemical problems and explore new areas of research in industrial chemistry.
- ❖ Are capable to use up to date librarysearching and retrieval methods to obtain in for mation about novel chemical process and issuesrelatedtoindustrialchemistry.

Reference Books:

1. Principles of polymers Science by P.Bahadur and N.V.Sastry.(Second Edition)
2. Polymer Science by V.R.Gowariker, N.V.Vashwanathan and Jaydev Shreedhar.

List of Open Source Software/learning website:

1. <https://swayam.gov.in>
2. <https://nptel.ac.in>
3. <http://onlinelibrary.wiley.com>
4. https://en.wikipedia.org/wiki/Main_Page

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Learn basic of polymer chemistry	Learning
CLO2	Understand mechanisms of polymerization	Understand
CLO3	Understanding eco-friendly bio-polymers	Understand & Apply
CLO4	Understand polymerization techniques	Understand
CLO5	Apply polymerization techniques in industry	Analyze & Apply

Mapping of CLOs with POs & PSOs:

Course Learning Outcomes	ProgramOutcomes(POs)								
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CLO1	H	M	L	L	L	L	L	L	L
CLO2	L	M	L	L	L	L	L	L	L
CLO3	L	M	H	H	H	L	H	L	L
CLO4	M	L	L	L	L	L	L	M	L
CLO5	M	H	L	M	H	H	M	M	L

H:High,M:Medium,L:Low

