

Branch Name:	B.Sc. Chemistry
Program Code:	SC103
Course Name:	INDUSTRIAL CHEMISTRY-II
Course Code:	2SC1030622
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	Effluent treatment & Waste management and Process-I ❖ Instrumentation, Principles and equipment for aerobic, anaerobic treatment, adsorption, filtration, sedimentation. Bag filters, Electrostatic precipitator, Mist eliminator, Wet scrubbers, Absorbers.	16	50%
2	Effluent treatment & Waste management and Process-II ❖ Bag filters, Electrostatic precipitator, Mist eliminator, Wet scrubbers, Absorbers. Solid waste management, Industrial safety	16	50%

Course Outcomes:

- ❖ Have solid foundations in the fundamentals of waste management in industrial chemistry.
- ❖ Are capable to use this knowledge for trouble shootings in industrial chemistry.
- ❖ Are capable to identify industrial problems and explore new areas of research in industrial chemistry.

Reference Books:

1. Wastewater Engineering (2013) by Metcalf and Eddy; Publisher - McGraw-Hill.
2. Environmental Engineering (2015) by Peavy, Rowe and Tchobanoglous; Publisher - McGraw-Hill.
3. Water Quality Engineering: Physical / Chemical Treatment Processes (2013) by Lawler and Benjamin; Publisher - John Wiley & Sons.

4. Industrial Wastewater Treatment, Recycling and Reuse (2014) by Bhandari and Ranade; Publisher – Elsevier.
5. Unit Operations and Processes in Environmental Engineering (1996) by Reynolds and Richards Publisher - CL Engineering.
6. Tchobanoglous G., Burton F. L. and Stensel H.D., "Waste Water Engineering: Treatment and Reuse", 4th Ed; Tata McGraw Hill.

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
- 5.

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

CLO	Description	Bloom's Taxonomy Level
CLO1	Learn fundamentals of waste management.	Understanding & Learning
CLO2	Understand and learn fundamentals of Industrial safety	Understanding & Learning
CLO3	Students will demonstrate an advanced level of knowledge in industrial chemistry.	Applying

Mapping of CLOs with Pos:

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

H: High, M: Medium, L: Low

