

## Odd Semester Lecture Plan

**Name of the college:** Government College of Arts, Science and Commerce, Sanquelim – Goa.

**Name of Faculty:** Ms. Rosalina Desilva

**Subject:** Chemistry

**Paper code:** CHC-211 - Basic Industrial Chemistry

**Program/Course:** S.Y. B.Sc.

**Division:** A

**Academic year:** 2026 – 2027

**Semester:** III

**Total Lectures:** 30

### Course Objectives: THEORY

1. Define and explain the scope of industrial chemistry, along with history and development of the chemical industry in India
2. Introduce the concept of intellectual property, covering patents, copyrights, and trademarks in the context of the chemical industry.
3. Analyze the basic requirements, raw materials, and operational essentials of major industrial sectors

### Course Learning Outcome: At the end of the course, students will be able to:

1. Integrate knowledge gained in different modules to propose comprehensive solutions to challenges in industrial chemistry.
2. Analyze the characteristics of industrial wastes, and understand principles of waste treatment thus proposing effective methods for the treatment and disposal of industrial waste ,segregate the industrial waste and treat it separately

| Month      | Lectures From: To: | No. of lectures allotted | Topic, Subtopic to be covered                                                                                   | Learning outcome                                                          | ICT Tools            | Reference books                                                                                                                                                                                                                       |
|------------|--------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| June 2026  | 22/6/26-27/6/26    | 02                       | Introduction:                                                                                                   | Students will be able to: integrate knowledge gained in different modules | LCD & Chalk and talk | 1. Industrial Chemistry Vol. I & II by B. K. Sharma, 7th edition, Krishna Prakashan, Meerut, 2014 Issued on: 05/03/2025 37 ..<br>37 2. Engineering Chemistry by Jain & Jain. 17th Edition, Dhanpat Rai Publishing company, New Delhi, |
| June- July | 29/6/26 - 04/7/26  | 02                       | Understanding Key Industries Introduction, raw materials and basic requirements of Leather industry, Fertiliser |                                                                           | LCD & Chalk and talk |                                                                                                                                                                                                                                       |

|             |                    |    |                                                                                                            |                                                       |                                    |                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|--------------------|----|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| July        | 06/7/26 - 11/7/26  | 02 | fertilizers, chlor - alkali industry,                                                                      | integrate knowledge gained in different modules       | <b>LCD &amp;</b><br>Chalk and talk | 2015<br><br>3. A textbook of Industrial Chemistry by Pol, Date, Adhav & Shinde, Manali Prakashan, Pune, 2021<br>4. Industrial Chemistry by Dr. Helen Njeri Njenga, African Virtual University, 2019<br>5. J. A. Kent: Riegel's Handbook of Industrial Chemistry, 10th edition, Springer, New York, 2012<br><br>. The Chemical Process Industries, by R. Norris Shreve, 4th edition, McGraw-Hill Publishers. |
| July        | 13/7/26 - 18/7/26  | 02 | paper industry, sugar industry,                                                                            | integrate knowledge gained in different modules       | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |
| July        | 21/7/26 - 26/7/26  | 02 | Cement industry, glass electrochemical industries                                                          | integrate knowledge gained in different modules       | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |
| July-August | 27/7/26- 01/8/26   | 02 | Pharmaceutical industry, polymer industry,                                                                 | integrate knowledge gained in different modules       | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |
| August      | 03/8/26 - 08/8/26  | 02 | Petroluem industry                                                                                         | integrate knowledge gained in different modules       | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |
| August      | 10/8/26 - 14/8/26  | 02 | Petroluem industry                                                                                         | integrate knowledge gained in different modules       | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |
| August      | 24/8/26 – 29/8/26  | 02 | Industrial waste and treatment processes Introduction, the problem of sustenance and the chemical industry | Understand industrial waste and problem of sustenance | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |
| September   | 31/08/26- 05/09/25 | 02 | characteristics of industrial wastes, types of industrial wastes                                           | Analyze characteristics of industrial wastes,         | <b>LCD &amp;</b><br>Chalk and talk |                                                                                                                                                                                                                                                                                                                                                                                                             |

|                      |                   |    |                                                                                     |                                                                                      |                                    |  |
|----------------------|-------------------|----|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------|--|
| September            | 07/09/26-12/09/26 | 02 | types of industrial wastes, solid industrial waste                                  | Explain types of industrial waste                                                    | <b>LCD &amp;</b><br>Chalk and talk |  |
| September            | 12/09/26-26/09/26 | 02 | principles of industrial waste treatment                                            | understand principles of waste treatment                                             | <b>LCD &amp;</b><br>Chalk and talk |  |
| September<br>October | 28/09/26-03/10/26 | 02 | protection of biosphere, basic trends in biosphere protection for industrial wastes | propose effective methods for the treatment                                          | <b>LCD &amp;</b><br>Chalk and talk |  |
| October              | 05/10/26-10/10/26 | 02 | Industrial waste treatment and disposal of industrial waste                         | propose effective methods for the treatment                                          | <b>LCD &amp;</b><br>Chalk and talk |  |
| October              | 12/10/26-14/10/26 | 02 | Effluents of industrial units and their purification<br><br>Revision                | disposal of industrial waste, segregate the industrial waste and treat it separately | <b>LCD &amp;</b><br>Chalk and talk |  |