

**CHM101A**  
**Undergraduate Chemistry Laboratory Course**  
**Asynchronous 2021-22 Semester I**  
**First Course Handout**

**Course Description:** This laboratory course is designed to teach fundamentals of chemical analysis, both theory and practice at first year undergraduate level. The experiments explore some of the concepts which deal with measurements, chemical reactions, stoichiometry, volumetric analysis, conductometry, pH metry and photochemistry.

**Evaluation:** Evaluation of students will be performed based on laboratory reports, and end semester examination.

|                   | <b>Weightage</b> |
|-------------------|------------------|
| Lab Reports       | 50%              |
| Quiz              | 25%              |
| End Semester Exam | 25%              |

**Every Monday material related to a laboratory experiment will be uploaded. The same will be discussed in the online session every Thursday from 4:00 – 5:00 PM. Attendance in the online session is mandatory.**

**Instructors:**

| <b>S. No.</b> | <b>Name</b>                                 | <b>Email</b>      |
|---------------|---|-------------------|
| 1             | Prof. S. K. Kundu<br>(Instructor In-charge) | sabuj@iitk.ac.in  |
| 2             | Prof. S. P. Rath                            | sprath@iitk.ac.in |
| 3             | Prof. T. G. Gopakumar                       | gopan@iitk.ac.in  |
| 4             | Prof. D. H. Dethe                           | ddethe@iitk.ac.in |

**Important Note:**

1. Both the End-Semester Exam and Quiz are compulsory to complete the course requirement.
2. Students are required to submit a lab report for the experiments taught every week. The lab reports of each experiment will be due within a week from the date of the online discussion. An assignment will be created for the submission of each lab report on the Hello IITK portal.
3. Marks will be deducted for late submission of each lab report. (-20% for each lab report)
4. Makeup exams/prorating for Quiz and End-Semester examination will only be allowed for cases for which an approved medical leave is obtained from DOAA/SUGC.

**Reference Books:**

1. Vogel's Textbook of Quantitative Chemical Analysis
2. General Chemistry Experiments by Anil J. Elias (Universities Press)

# CHM101A

## Asynchronous 2021-22 SEMESTER I

### Timetable

| DATE              | EXPERIMENTS                                  |
|-------------------|--|
| December 2, 2021  | General & Safety Instructions                |
| December 9, 2021  | Determination of Calcium in milk powder      |
| December 16, 2021 | Estimation of Iodine in Common Salt          |
| December 23, 2021 | Synthesis of Aspirin                         |
| December 30, 2022 | Isolation & Identification of DNA            |
| January 6, 2022   | Extraction of Caffeine                       |
| January 13, 2022  | <b>Mid Semester Exam (NO LABS)</b>           |
| January 20, 2022  | <b>Quiz</b>                                  |
| January 27, 2022  | <b>Mid Semester Recess (NO LABS)</b>         |
| February 3, 2022  | Determination of pI of glycine               |
| February 10, 2022 | Conductometric Titration                     |
| February 17, 2022 | Energy of Activation                         |
| February 24, 2022 | Preparation of a Nickel Complex and Analysis |
| March 3, 2022     | <b>End Semester Exam</b>                     |