



**Birla Institute of Technology & Science, Pilani**  
Hyderabad Campus

**ACADEMIC UNDERGRADUATE STUDIES DIVISION**

**FIRST SEMESTER 2020-2021**

**Course Handout Part II**

**Date:**

26/10/2020

In addition to part -I (General handout for all courses appended to the time table) this portion gives further specific details regarding the course.

|                             |  |
|-----------------------------|--|
| <b>Course Number</b>        | CHEM F110  |
| <b>Course Title</b>         | CHEMISTRY LABORATORY   |
| <b>Instructor-in-Charge</b> | Prof. Sounak Roy   |
| <b>Team of Instructors</b>  | Prof. Krishnan Rangan, Prof. Durba Roy, Prof. K V G Chandrasekhar, Prof. D. Ramaiah, Prof. K. Sumithra, Prof. Tanmay Chatterjee, Prof. Subit K Saha, Prof. Manab Chakravarty, Prof. Jayanty Subbalakshmi |

**1. Course Description:** This course is based on laboratory experiments in different fields of chemistry. The course is available for first year students.

**2. Scope and Objective:** The main objective of this course is to educate the students with different aspects of chemistry experiments. The students will carry out a set of experiments that will expose them to various experimental techniques in Organic, Inorganic and Physical chemistry. They will learn operating different scientific equipments for collecting data. Experiments in organic and inorganic chemistry will include synthesis and analysis of different compounds. Experiments in physical chemistry will include pH metry, conductometry, spectrophotometry and chemical kinetics experiments.

**3. Text Book(s): Chemistry Laboratory Manual**

**4. Reference Book:** Reference sources for each experiment will be specified as necessary.

**5. Course Plan:** The students will perform selected experiments in organic, inorganic & physical chemistry.

**List of Experiments:**

- 1. SYNTHESIS AND RECRYSTALLIZATION OF DIBENZALACETONE.**
- 2. DETERMINATION OF THE CONCENTRATION EQUILIBRIUM CONSTANT ( $K_c$ ) OF THE REACTION.**
- 3. DISSOCIATION CONSTANT OF A WEAK ELECTROLYTE BY CONDUCTOMETRY**

4. i) PREPARATION OF POTASSIUM BIS(OXALATO)CUPRATE(II) DIHYDRATE  
ii) PREPARATION TRIS(ACETYLACETONATO)IRON(III) COMPLEX.

5. SYNTHESIS OF GLUCOSAZONE.

6. DETERMINING ACTIVATION ENERGY OF THE HYDROGEN PEROXIDE -  
POTASSIUM IODIDE CLOCK REACTION

7. ACID-BASE TITRATION USING pH METER.

8. ESTIMATION OF COPPER BY IODOMETRY.

9. DETERMINATION OF THE UNKNOWN STRENGTH OF AN ACID SOLUTION BY  
CONDUCTOMETRIC TITRATIONS

**6. Evaluation:**

| Component                  | Duration | Weightage (%) | Date & Time          |
|----------------------------|----------|---------------|----------------------|
| Lab discussion<br>and quiz |          | 70            | Continuous/Open book |
| Quiz                       | 90 min   | 30            | Open book            |

7. **Make-up policy:** Make up will be granted for **genuine cases** only as decided by the team.

8. **Notice:** All notices concerning the course will be displayed on CMS.

Instructor-in-Charge  
Chemistry Laboratory

