



## COURSE HANDOUT (PART-II)

Date: 02/08/2017

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

**Course No. : CHEM F110**

**Course Title : CHEMISTRY LABORATORY**

**Instructor-in-charge: Inamur Rahaman Laskar**

**Instructors:** Ajay Kumar Sah, Bharti Khungar, Bibhas Ranjan Sarkar, Kiran Bajaj, Madhushree Sarkar, Mrinmoyee Basu, Prashant U. Manohar, Rajeev Sakhuja, Surojit Pande, Aabid Hamid, B Pallavi, Bijoya Das, Chavi Mahala, Dinesh Kumar, Fayaz Baig, Hitesh Kumar Saini, Jagrity Choudhary, Khandagale S Bhausahab, Nitesh Kumar Nandwana, Rishika Agarwal, Roshan Nazir, Sachin Chaundhary, Santosh Kumari, Saroj, Sunita Kumari

### 1. AIMS AND LEARNING OBJECTIVE:

The main objective of this course is to educate the students with different aspects of chemistry experiments. The students will carry out set of experiments that will expose the students to experimental methods and to integrate theoretical knowledge and concept to practical experience. Students will also learn the operation of some scientific equipments for performing experiments.

### 2. TEXT BOOK:

Lab Manual for Chemistry Laboratory: EDD Notes

### 3. REFERENCE BOOK:

Vogel's textbook of quantitative chemical analysis, Prentice Hall, 2000.

### 4. COURSE PLAN:

The students will perform the following ten experiments with an emphasis on individual planning and execution of the experiments.

Sl. No.	Experiment Name*
1.	Determination of the pH curve of an acid-base titration
2.	Determination of total hardness of water with EDTA
3.	Identification of some organic compounds
4.	Estimation of copper(II) by iodometry
5.	Synthesis and recrystallization of dibenzalacetone



Serial No.	Experiment Name
6.	Mechanochemical synthesis of a Schiff's base ligand and its Nickel(II) complex – Reaction monitoring using Thin Layer Chromatography
7.	Kinetics of the iodination of acetone
8.	Determination of the concentration equilibrium constant ( $K_c$ ) of the reaction: $\text{CH}_3\text{COOH}(\text{aq}) + \text{C}_2\text{H}_5\text{OH}(\text{aq}) \rightleftharpoons \text{CH}_3\text{COOC}_2\text{H}_5(\text{aq}) + \text{H}_2\text{O}(\text{l})$
9.	Dissociation constant of a weak electrolyte by Conductometry
10.	Determination of saponification value of an oil

\* Experiment numbers 1-5 will be carried out in first cycle

(1-3, Room No.: 3147; 4-5, Room No.: 3101)

Experiment numbers 6-10 will be carried out in second cycle

(6-8, Room No.: 3147; 9-10, Room No.: 3101)

*Marks distribution:* Punctuality + Safety measures + Cleanliness: 2 + 2 + 1

Laboratory Conduct: 10

Record maintenance: 10

#### 5. EVALUATION:

Component	Weightage %	Date and Time
Laboratory Work and Reports (225)	75%	Continuous
Comprehensive Examination (75)	25%	

**6. IMPORTANT NOTES:** Students must **submit laboratory report** for each experiment in the **next lab-class**. Students **must read the experiments** from the lab-manual before coming to the lab.

**7. MAKE-UP:** Make-up in laboratory course is generally less feasible but one buffer experiment will be offered for the semester. Further make-ups may require rigorous validation as per the institute guidelines.

**8. NOTICE:** Notices concerning this course will be displayed on **Nalanda/ Chemistry Department notice board** only.

Inamur Rahaman Laskar  
Instructor-In-Charge  
CHEM F110