**CHE 12: Chemistry I Lab**

**Course Type: Lab Pre-requisite: -----**

**Credits: 1 Contact Hours: 60 Total Marks: 100**

**Year/Level: 1st Semester/Term: 1st**

The main focus of this course is to understand and analyze different elements and their reactions to fire, acids and bases. It also focuses on preparations of acids, bases and inorganic compounds into different percentages.

**Maliha Chowdhury**, Faculty of Department of Natural Science.

**Lecture:** Will follow as given in the departmental schedule.

**Office:** 40 Bulu Ocean Tower, 3rd floor, Kemal Ataturk Avenue, Banani, Dhaka. Office hours: whenever I am on campus.

**Contact:** 01521496768, malihachowdhury281@gmail.com

**Grades:**  Final- 100%

**Attendance:** Your attendance will be recorded at various times and this attendance record will be used to determine 10% of your grade. Absences will be considered excused only for documented illness or exceptional circumstances which generally must be reported prior to the absence. Absences for university sponsored events must be reported as early in the semester as possible. The absence will be considered unexcused if there appears to be any delay in reporting the reason for the absence. Make-up exams may be given for excused absences. No make-up quizzes will be offered but the quiz average may be adjusted for an excused absence.

**Academic Honesty:** Academic dishonesty on any exam or quiz will result in an “F” for the quiz or exam. A second offense will result in a grade of “F” for the course. In all cases, proper due process consistent with the “Code of Students’ Rights and Responsibilities” will be followed. See detailed later.

**Disclaimer:** Instructor reserves the right to make changes and/or make corrections to the syllabus as needed to improve overall learning environment.

**Academic Misconduct:** Academic dishonesty by a student is defined as unethical activity associated with course work or grades. It includes, but is not limited to:

(a) Giving or receiving unauthorized aid on examinations,

(b) Giving or receiving unauthorized aid in the preparation of notebooks, themes, reports, papers or any other assignments,

(c) Submitting the same work for more than one course without the instructor's permission, and,

(d) Plagiarism. Plagiarism is defined as using ideas or writings of another and claiming them as one's own. Copying any material directly (be it the work of other students, professors, or colleagues) or copying information from print or electronic sources (including the internet) without explicitly acknowledging the true source of the material is plagiarism. Plagiarism also includes paraphrasing other individuals' ideas or concepts without acknowledging their work, or contribution. To avoid charges of plagiarism, students should follow the citation directions provided by the instructor and/or department in which the class is offered.

Unless otherwise stated by the instructor, exams, quizzes, and out-of-class assignments are meant to be individual, rather than group, work. Hence, copying from other students’ quizzes or exams, as well as presenting as one's own work an assignment prepared wholly or in part by another is in violation of academic honesty.

The above guidelines do not preclude group study for exams, sharing of sources for research projects, or students discussing their ideas with other members of the class unless explicitly prohibited by the instructor.

Since the violation of academic honesty strikes at the heart of the educational process, it is subject to the severest sanctions, up to and including receiving an "F" for the entire class and dismissal from the university.

When an instructor has a reasonable good faith belief that a student(s) has committed academic misconduct, that instructor has the sole discretion to give the student an “F” on the assignment/test to which the student committed academic misconduct or an “F” for the entire course.

**Course Contents:**

***Experiments:***

***Qualitative Analysis:***

Dry test for acid radicals

Wet test for basic radicals

Preparation of stock solution &amp; wet test for acid radicals

Separation of group I, II, IIIA, IIIB, IV, V.

Analysis of group I (Pb, Ag, Hg)

Analysis of group II (Pb, Cu, Cd, Hg, Sb, Sn)

Analysis of group IIIA (Al, Fe, Cr)

Analysis of group IIIB (Co, Ni, Zn, Mn)

Analysis of group IV (Ca, Ba, Sr)

Analysis of group V (Mg, Na, K, NH4 + )

***Volumetric Analysis:***

Preparation of 1M HCl and standardization

Preparation of 1M NaOH and standardization

Conversion of 98% H2SO4 or 37% HCl into suitable concentration.

Preparation of 1M H2SO4 and standardization.

Preparation of 1M CH3COOH and standardization.

Preparation of 1M KOH and standardization.

***Inorganic Preparation***

Preparation of Potassium dichromate

Preparation of Chrome Alum

Preparation of Ferrous Ammonium Sulphate

Preparation of Potassium Permanganate

Variation of pH of different solution (Acidic, Basic, Neutral)

**Learning outcome:**

1. Able to understand and analyze different elements from the periodic table.
2. Able to prepare different acids, bases and inorganic compounds into different ratios.
3. Able to calculate mole ratios for preparing different compounds.