



Shanghai University of Finance & Economics

2018 Summer Program

CHE 13 Introduction to Chemistry with Lab

Course Outline

Course Code: CHE 13

Instructor: TBA

Home Institution: TBA

Office Hours: TBA and by appointment

Email: TBA

Credit: 4

Class Hours: This course will have 72 class hours, including 40 lecture hours, professor 10 office hours, 10-hour TA discussion sessions, 2-hour review sessions, 10-hour extra classes.

Course Description:

Introduction to Chemistry will provide students with an overview of the current trends and body of knowledge in Chemistry, including basics of the scientific method and of the analysis of scientific data.

Course Objectives:

The main course goal is to allow students to reach a comprehensive understanding of the issues and methods in Chemistry, in order to decide whether to pursue studies in the field. In the process of reaching this goal, our objectives are that each student will:

- Become familiar with current scientific theories and research in the major topic areas of Chemistry;



- Discover the personal relevance of course material in their everyday and professional lives, in order to make fully informed decisions;
- Develop the skills necessary to evaluate and think critically about information concerning biological phenomena obtained from research, the general public, and the media;
- Be well prepared for advanced courses in Chemistry/Life Sciences.

Required Textbooks

Introductory Chemistry, David Ball, ISBN 13: 978-1-4533110-7-3, Saylor Foundation.

<https://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=22>

Several readings will be required throughout the course, either to prepare for class or to complete an assignment. Additional material will be posted online to provide a free and easy access to everyone.

Grading & Evaluation:

Assignments/Labs (30%) – Midterm exam (30%) – Final exam (40%)

Intermediary assignments will be posted throughout the course, to help students assess their needs and to ensure that all the important topics are well understood. Assignments and labs are also an opportunity for students to ask questions concerning unclear notions, as the main objective is not to grade but to help everyone reach an optimal level of comprehension.

Midterm and final exams will target all topics previously covered in class. Lecture notes, labs and assignments are important to succeed in the midterm and final exams, yet some questions will be specifically intended to stimulate students' critical thinking.

Attendance is extremely important for success in this class. It is expected that each student will commit fully to the assignments and readings required. Exams will cover the required texts as well as material presented or discussed in class.

Course Schedule (tentative):

Week 1:

Lecture 1: Course Introduction – Syllabus

Lecture 2: Chemistry: Methods and Measurements

Lecture 3: The Scientific Method: Basics & Core Principles

Lecture 4: Experimental Design in Science



LAB 1: Experimental designs

Week 2:

Lecture 5: Atom and Periodic Table

Lecture 6: Chemical Equation and Calculations

Lecture 7: Matter and Solutions

Lecture 8: Energy, Rate and Equilibrium

Review Session

LAB 2: Hypothesis testing

Week 3:

Lecture 9: Acids and Bases and Oxidation-Reduction

Lecture 10: Organic Chemistry

Lecture 11: Biological Chemistry

MIDTERM

LAB 3: Data analysis

Week 4:

Lecture 12: Cell Division & Differentiation

Lecture 13: Analyzing Scientific Data

Lecture 14: General Review

LAB 4: Personal project

Review Session

FINAL EXAM

Final Exam Q&A – Course Wrap-up