

CHEM 3830 Physical Chemistry Laboratory I

Course Description:

This laboratory course covers laboratory and computer techniques that illustrate the basic principles of physical chemistry. The experiments provide comprehensive training for students on (1) safe handling of chemical reagents and chemical waste; (2) proper usage of laboratory apparatus and equipment commonly involved in physical chemistry; (3) basic techniques in using computer in physical chemistry; (4) fundamental procedures and techniques to investigate theories with experimental data and results; (5) recording, processing, and reporting experimental data and results, and; (6) conducting search on scientific literature. This course allows students to acquire experiences in fundamental experimental practices in physical chemistry. Lab manual can be obtained from the course teacher.

Pre-requisite:

CHEM2870.

Co-requisite:

CHEM3320

Experiments (for reference only):

Computer Simulation (I): Boltzmann Distribution

Chemical Kinetics of Second-Order Reaction

Method of Initial Rates: Iodine Clock

Inversion of Cane Sugar

Computer Simulation (II): The RRKM Theory

Conductivities of Solutions

Transport Number of Ions

Computer Simulation (III): Two-Dimensional Trajectories