

CHEM 3840 Physical Chemistry Laboratory (II)

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.

Co-requisite:

CHEM3340

Main Course outline (for reference only):

1. Dipole Moments of Molecules
2. Magnetic Susceptibility
3. Vibrational Spectrum of CO₂
4. Isotopic Effect in Vibrational Spectroscopy
5. Determination of Equilibrium Constant by Titration Methods
6. Rotational-Vibrational Spectrum of HCl
7. Spectroscopic Study of Dissociation Constant
8. Kinetics Study of Ester Saponification by Conductivity Measurement