

# Minnesota State University Moorhead

## CHEM 465: Physical Chemistry Laboratory

### A. COURSE DESCRIPTION

Credits: 1

Lecture Hours/Week: 0

Lab Hours/Week: 3

OJT Hours/Week: \*.\*

Prerequisites:

CHEM 460 - Physical Chemistry: Quantum Chemistry & Kinetics

Corequisites: None

MnTC Goals: None

Experiments in spectroscopy, computational chemistry, kinetics, and thermodynamics, including analysis of data.

**B. COURSE EFFECTIVE DATES:** 09/06/2018 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Infrared and UV-Vis Spectroscopy
2. Computational Chemistry
3. Reaction Kinetics
4. Properties of Gases
5. Calorimetry
6. Phase Behavior
7. Electrochemical Measurements

### D. LEARNING OUTCOMES (General)

1. Apply the principles of physical chemistry in a laboratory setting, and understand how thermodynamic, kinetic, and molecular properties are measured.
2. Gain experience with experimental and computational techniques in physical chemistry.
3. Gain experience with data and error analysis techniques.
4. Improve their technical writing skills.

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted