

Physical Sciences

**CHEM 3080 – 1 Credit**  
**Physical Chemistry Laboratory (0,0,4)**  
**Winter 2024**

**Instructor:** Dr. Nelaine Mora-Diez  
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**Office Hours:** Tue, Fri (2:15 - 2:45 PM)  
Additional office hours are available by appointment

**Description**

This course consists of a selection of computational laboratories illustrating a variety of physical chemical principles most of which are discussed in the third-year physical chemistry courses CHEM 3060 and CHEM 3070.

**Laboratory Classes**

4 hours/week      Wed      2:30 - 6:20 pm      S 278

**Moodle**

Any electronic course-related materials will be available through Moodle.  
Moodle course: "CHEM 3080 - Physical Chemistry Laboratory"

**Reference Texts**

Chemistry 3080 Laboratory Manual (available on Moodle)

The computational labs will make use of the software Gaussian16 (in Windows and UNIX), GaussView 6.0, PuTTY and WinSCP. Links to the websites of these software can be found in Moodle.

**Assessment**

Lab 1: Reactivity of Substituted Benzenes	20%
Pre-Lab Quiz	5%
Lab Work	3%
Calculations & Lab Report	12%
Lab 2: UNIX & New Software	25%
Pre-Lab Quiz 1	3%
Pre-Lab Quiz 2	3%
UNIX Quiz	4%
Lab Work 1	3%
Lab Work 2	3%
Calculations & Lab Report	9%
Lab 3: Calculations in Solution	17%
Pre-Lab Quiz	5%
Lab Work	5%
Calculations & Lab Report	7%
Lab 4: Gas-phase Reactions: Kinetics & Thermodynamics	20%
Pre-Lab Quiz	5%
Lab Work	5%
Calculations & Lab Report	10%
Lab 5: Statistical Thermodynamics	18%
Pre-Lab Work	8%
Lab Work	3%
Calculations & Lab Report	7%

**Lab Work**

Attendance, partial calculations and output files to be shown/submitted before the end of the lab

**Calculations & Lab Report**

Printed copy provided on time (including the files submitted via Moodle)

Quality of the results obtained from the calculations

Data organization, hand-written calculations

Discussion of the results obtained

Writing quality

A letter grade will be awarded using the TRU Grading System (Policy ED-3-5) on page 24 of the TRU Calendar. This one-semester course is worth 1 credit.