# Quote from a P. Chem Textbook

Ludwig Boltzmann, who spent much of his life studying statistical mechanics, died in 1906, by his own hand. Paul Ehrenfest, carrying on the work, died similarly in 1933. Now it is our turn to study statistical mechanics. Perhaps it will be wise to approach the subject cautiously.

*David L. Goldstein, States of Matter*


We’re in the endgame now

# Lecture 0: Syllabus Day

Chem 322 Spring 2026

# Chem 322 Course Information

| | |
|---|---|
| **Professor:** | Yuting Chen |
| | `ychen5@hamilton.edu` |
| **Please call me:** | Yuting, Professor, Professor Yuting, Professor Chen, Chen |
| **Class Meetings:** | MWF 9–10am, SCCT G042 |
| **Office Hours:** | Mon 4–5pm, Tues 4–5pm, Wed 3–5pm |
| | Thurs 10am–noon, Fri 10–11am |
| | Walk in anytime or make appointment |
| **Open Door:** | Tue–Fri 1–5 pm |

# Teaching Assistant: Grace Wilde

**Class:** 2026

**Concentration:** Chemistry

**Drop-in Hours:** Thursdays 7–9pm

# Carnegie Hour

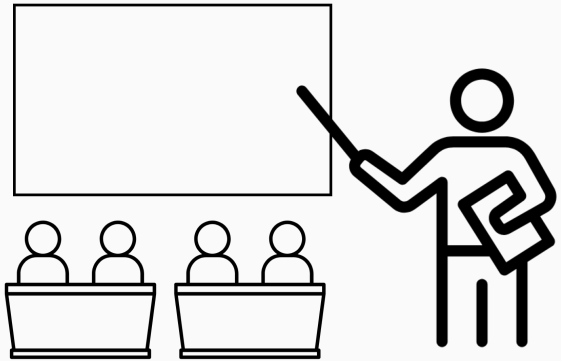
Standard set by the Department of Education on how much time college students should be putting in outside of class

**Definition**

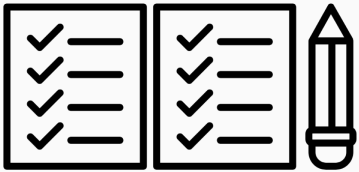
One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week

**1 hour in class**
**2 hours out of class**

# Traditional Classroom



In-Class: Lecture



Homework

# Flipped Classroom

Pre-Class: Lecture

In-Class: Activity

Homework

# Grading Schemes

| Assessment | Percentage % |
|---|---|
| Pre-Class Quizzes | 10 % |
| Homework | 15 % |
| 4 Exams | 75 % |
| Total | 100 % |

Scheme 1: Exam + HW + Quiz

| Assessment | Percentage % |
|---|---|
| 4 Exams | 100 % |
| Total | 100 % |

Scheme 2: Exam Only

Pre-Class Quizzes are graded through Blackboard

Homework and Exams are graded through Gradescope

# Pre-Class Quizzes - 10%

Before each class, you should watch the lecture recording posted to Blackboard. After watching complete the quiz and post questions to the discussion board.

- Short 2 question comprehension quiz before class
- Due at 9am, before class starts
- 40 total quizzes, lowest 8 are dropped
- There is no making up pre-class quizzes

# In-Class Activities

In class, we are working on activity worksheets.

- **Attendance is optional**
- 5 minute lecture summary
- Collaborative problem solving
  - Physical and digital coursepack
  - Answer Keys posted to Blackboard
- Class Spotify playlist

# Homework - 15%

Each activity worksheet will have a homework problem to work on outside of class.

- Collaboration is okay, but recommend try individually first
- Collected weekly in batches of 3, due on Gradescope, Friday 5pm
- Graded out of 3, 1 pt effort, 2 pt correctness

| Mon | Tue | Wed | Thu | Fri |
|---|---|---|---|---|
| 19 | 20 | **21** | 22 | 23 |
| 26 | 27 | 28 | 29 | **30** |

# HW Corrections, Late Policy

- HW returned on Monday, corrections due following Friday 5pm
- No corrections for Late HW and homework submitted with minimal effort
- Late HW, can submit up to 3 days late, -1 per day
- To ensure fairness for all students, I cannot provide assistance on assignments past their deadline

| Mon | Tue | Wed | Thu | Fri |
|---|---|---|---|---|
| 19 | 20 | **21** | 22 | 23 |
| 26 | 27 | 28 | 29 | **30** |
| 2 | 3 | 4 | 5 | 6 |

# Exams - 75%

| Exam | Date | Time |
|---|---|---|
| Exam 1 | Thursday, February 19 | 6–10 pm |
| Exam 2 | Thursday, March 12 | 6–10 pm |
| Exam 3 | Thursday, April 23 | 6–10 pm |
| Exam 4 | Sunday, May 17 | 9 am–noon |

**Must earn an exam average of at least 60% in order to pass the class.**

# Exam Info

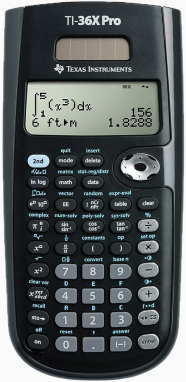
- Write exams for 3 hours, give 4 hours to reduce math stress
- Exam Content
  - Exam 1: Statistical Mechanics (usually hardest)
  - Exam 2: Thermodynamics
  - Exam 3: Equilibrium, Solutions
  - Exam 4: Kinetics, Mechanisms

# Allowed Materials

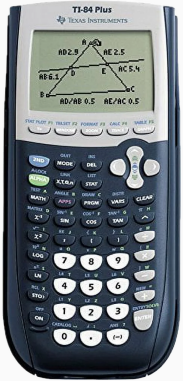
- 2 page, single–sided physical “cheat sheet” of your notes, my slides, activity worksheets, answer keys posted to Blackboard, and textbook excerpts
- “Cheat sheet” is collected with the exam, returned when exams are graded
- Scientific or graphing calculator
- All other electronics (smartwatch, phone, smart glasses) prohibited
- Physical Hamilton College ID

# Calculators

## Scientific Calculator




## Graphing Calculator




## Computer Algebra System

# Exam Conflicts

- All conflicts must be reported by Jan 28, 5pm by filling out the form, otherwise you are expected to take the test at the scheduled time
- Conflicts may require documentation to be submitted
- If conflict is conditional, still required to submit the form, including the date you find out if the conflict will occur or not

**Typically Approved Conflicts**

- Another exam at same time
- College approved event or travel (athletic competition, academic conferences, grad school visits etc)
- Mandatory practice for athletics, choir or orchestra, practice ending around 6pm is eligible for a late start at 6:30pm

**Not Approved**

- Personal travel
- Work shift
- Club sports / club events
- Optional team events or practice

# Improvement Points

$$\text{Improvement Points} = \frac{S_{\max} - S_{\min}}{3}$$

where $S_{\max}$ and $S_{\min}$ are your highest and lowest exam scores

- Separate column in Blackboard, added to total exam points
- Acts like a curve for lowest exam score
- Does not affect the minimum passing exam threshold
- Students violating the Honor Code are not eligible

# Honor Code

**Examples of Honor Code Violations**

- Using generative AI on assignments
- Copying another students homework
- Copying the solution from an answer key
- Unauthorized materials during the exam
- Cheating or colluding on exam

**Consequences of violating the Honor Code**

- Homework: 0 on the assignment, a full letter grade deduction. Second violation an automatic failure of the course
- Exams: any violation will result in automatic failure of the course

# Examples of Acceptable and Unacceptable AI usage

- Generating Practice Problems

  Make me practice problems similar to “copy paste problems from activity”

- Checking your work

  Here is the answer key, here is my work. Tell me where I made a mistake.

- Concept Explanations

  Help me understand why “insert question here”

- Completing Pre-Class Quizzes and Homework

  You may not use AI on anything submitted for a grade

# Do I need to buy the textbook?

- **Is the textbook required?**
  No, there are no required readings or homework problems from textbook
- **Is reading the textbook a good way to study?**
  McQuarrie is a bit dense, see Chemistry Resources on Blackboard
- **What is the textbook good for?**
  Concept explanations in text, practice problems

# To Do List

- Read detailed syllabus on Blackboard
- Complete Syllabus Quiz, unlimited tries, 100% required
- Fill out Welcome Survey
- Fill out Exam Conflict Form if you have a conflict
- Watch Lecture 1, complete pre-class quiz for Friday
- Contribute to class playlist
- Explore the Blackboard

# Facilitated Group Study (will talk about after Activity 1)

- Structured similarly to class meetings, working on additional activities based on prior weeks material
- Officially starts week of 2/9, will hold unofficial meetings week of 2/2 to keep pace with content
- Attendance is mandatory
- Sign up on Doodle poll by Saturday if interested
- QSR worksheets will be posted to Blackboard