

Summer 2021 Chemistry S161/S165

General Chemistry I and II introduces the fundamentals of chemistry with emphasis on scientific problem-solving skills. Students learn chemical principles and apply these scientific principles to solve qualitative and quantitative problems.

Completing both courses fulfills the prerequisites for medical school and for all majors that require a year of general chemistry, as well as the general chemistry prerequisite for Chem 220.

Given the compressed schedule of a summer session, the course requires an extensive commitment of time and effort. Given the cumulative nature of the content, keeping up with the material is a priority as there is very little time to go back and relearn concepts if not fully understand when first taught.

In light of the global COVID-19 pandemic, this course will be taught entirely online. Lectures and discussion sections will occur at the times (US Eastern Daylight Savings Time) below. Your attendance in these classes is pivotal to your success and so you must ensure you are available at these times.

Instructor: Dr. Paul Cooper E-mail: paul.d.cooper@yale.edu

Office Hours: I will be formally available after discussion section every M and W noon-1pm. I'm more than happy to meet with you outside of these hours on an as-needed basis. Send me an email to arrange a day and time.

Canvas is used for the course website, and you are responsible for reading and knowing the course information described there.

Zoom will be used to deliver all lecture content, all discussion sections and hold office hours.

Class Times

Lecture - MTWThF 9:30-10:45am

Discussion Section – M & W 11:00am-noon, Th 11:00-11:30am . A short quiz will be given on each M & W section.

Required Resources

The textbook for the course is the General Chemistry e-text published by Top Hat (<https://tophat.com/marketplace/science-&-math/chemistry/full-course/general-chemistry-franklin-ow/293/> (Links to an external site.)). This is a **digital-only** book, and as such you will need access to it. It is accessible via a computer, tablet or smartphone. Purchasing the book will also provide access to all homework and quiz questions. Further instructions (course code etc) will be posted here a week before classes commence.

Please note: If you're only taking one semester of Gen Chem over summer with the other taken either prior or you intend to take it after Summer 2021, this textbook is **not** the adopted text used by Yale Chem during Fall and Spring semesters. The Top Hat text however is the preferred textbook for the Yale Summer Session and is required.

Class Schedule

Chem 161

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Intro/Basics	Basics	Matter	Matter	Molecules/ Compounds
Week 2	Molecules/ Compounds	Reactions/ Stoichiometry	Reactions/ Stoichiometry	Reactions/ Stoichiometry	Exam1
Week 3	Gases	Gases	Thermochemistry	Thermochemistry	Introduction to Quantum Theory
Week 4	Atomic Structure	Atomic Structure	Lewis Structures	Chemical Structures	Exam 2
Week 5	Chemical Structures	Intermolecular Forces	Phase Changes	Solutions	Final Exam

Chem 165

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Kinetics	Kinetics	Kinetics	Equilibrium	Equilibrium
Week 2	Acids/Bases	Acids/Bases	Aqueous Equilibria	Aqueous Equilibria	Exam1
Week 3	Thermodynamics	Thermodynamics	Electrochemistry	Electrochemistry	Nuclear Chemistry
Week 4	Nuclear Chemistry	Solids	Coordination Chemistry	Coordination Chemistry	Exam 2
Week 5	Organic Chemistry	Organic Chemistry	Special Topics	Special Topics	Final Exam

Exams

Chem 161

Exam 1	Friday 18 June
Exam 2	Friday 2 July
Final Exam	Friday 9 July

Chem 165

Exam 1	Friday 23 July
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Exam 2	Friday 6 Aug
Final Exam	Friday 13 Aug

Laboratories

Labs at Yale are a different course (Chem 134L/136L) and the organization and grades are separate.

Grading

There are 100 points available for each course in total.

Homework Problems (total 24 points) – for each chapter there will be two homework sets. The first will be “practice” questions that you may attempt as many times as you wish. These will be graded on a completion basis only. The second will be a traditional end-of-chapter style problem set usually consisting of 20-25 questions. You will have 3 attempts to get these correct.

Quizzes (total 6 points) – at the end of each Discussion Section, there will be a short quiz.

Exams (total 70 points) – Exam 1 and 2 each contribute 20 points each, and the Final Exam contributes 30 points.

Letter Grades. Letter grades will only be assigned to the entirety of the semester's work and not to individual assessments. Typically, a final letter grade of B+ corresponds to the class average, but it is possible for everyone to get an A if you all excel!

The final grades are *not* assigned with a curve but based on cut-offs determined by the instructor as A = consistently excellent answers; B = primarily correct answers; C = lack of understanding of some key concepts; D = lack of understanding of most key concepts.

Academic Honesty Policy

Plagiarism is defined in the *Undergraduate Regulations* page, as are the penalties associated with cheating:

<http://catalog.yale.edu/undergraduate-regulations/>

Examples of cheating include, but are not limited to:

- Getting the answers from another student for problem sets, or having another student complete your online homework. You may discuss the Practice Problems with one another.
- Looking at unauthorized notes, books, or another student's paper during an examination.
- The use of a phone or Internet-enabled device during an exam. You must find a compliant calculator for use in the exams.
- Alteration of an exam after turning it in.

I encourage you to form study groups and to work together on ungraded questions.

Online Honor Code

Yale University is committed to upholding our shared values while community members are spread throughout the world. To carry out Yale's mission and continue to cultivate educational excellence, we ask everyone to abide by the following principles of academic integrity. Yale continues to lead during all circumstances, and we invite our community to uphold these values as we move forward together.

The same standards for academic integrity apply to online and remote forms of education. All coursework submitted by students is expected to be their own and accomplished according to course guidelines. Dishonesty, plagiarism, and unauthorized collaboration will be subject to disciplinary action, according to Yale's academic standards.

Unless your instructor explicitly states otherwise, educational material shared by your instructor or classmates is not intended for distribution beyond the online classroom. Educational material includes, but is not limited to, images, message board posts, digital presentations (e.g., PowerPoint, Keynote, etc.), and links to live or recorded class sessions.

Disabilities

If you have a documented disability that requires special accommodations, you must send a Letter of Accommodation to Dr. Cooper. In the case of exams, advanced notice of at least 1 week is required so that arrangements can be made.