General Chemistry

Chem 0110-1235 CRN 10526

Every aspect of the world today - even politics and international relations - is affected by chemistry.

- LINUS PAULING, Nobel Prize 1954

Class:
T, Th
1:00 -2:15 pm
Rm 152 CSC

Instructor:
Prof. Sean Garrett-Roe

What you need to buy

Required Textbook:
Chemistry: A Guided Inquiry, Pitt Edition
$18 from Pitt Bookstore
Bring to every class!

***Recommended Textbook:**
General Chemistry
Ebbing & Gammon, 11th ed.
$28 (Rent) - $170 (Buy new)

****Homework system subscription**
Sapling Learning ($33.50/semester)
macmillanlearning.com

Class participation subscription
Top Hat (free with Pitt email)
https://app.tophat.com/login
(select U. Pittsburgh and use "single sign-on" with your Pitt credentials)

Lab goggles
You cannot enter the lab w/o them!

Lab manual
Campus Bookstore only!

Scientific calculator
Not your smartphone. Bring to all exams and labs.

* Earlier editions or other textbooks can be used but you will have to match the topics/chapters
** Subscription code can be purchased in the Campus Bookstore or on-line.

Grading

A	93%-99%
A-	90%-92%
B+	87%-89%
B	83%-86%
B-	80%-82%
C+	77%-79%
C	73%-76%
C-	70%-72%
D+	67%-69%
D	63%-66%
D-	60%-62%
F	0%-59%

*Grades will be calculated based on total points and will be assigned according to the guide to the right. Scores will be posted on Blackboard/CourseWeb.

Type	Points	# counted/#	Total points
Exams	100	2/3	200
Final Exam	200	1/1	200
Recitation Quizzes	10	8/9	80
**Lab	100	n/a	100
***Homework	50	n/a	50
***In-Class Work	25	n/a	25
Total			**655**

*The instructor may elect in certain circumstances to adjust all raw scores upwards prior to assigning the grades.
** Lab grades will be assigned by the TAs
*** The total points accumulated at the end of the semester in each category will be normalized to give a number of points out of 25 or 50. Example: if there were 100 points total and you earned 80, you would get 20 points towards your final grade.

Your instructor

Prof. Sean Garrett-Roe
sgr@pitt.edu

Office: 216 Eberly Hall
Office hours: T 2:30-3:30 pm; F 11-12 pm

Research: Physical chemistry, ultrafast spectroscopy, ionic liquids

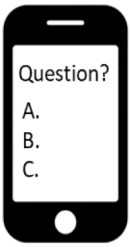
Teaching experience: 7 years; physical chemistry

Hobbies: Biking; guitar

Your feedback matters!

We will request your feedback on the course several times through the semester. This feedback helps us to improve the course, and every response is important to us. This feedback is anonymous and will not affect your grade in any way. To thank you for your time, we will also give extra credit homework points!

TOP HAT



Charge Me!

Top-Hat: Real-time class and group response system

Why:

- Learning works best when the learner (you) is not passive.
- Scientists get things right by talking with each other.
- The instructor gets immediate feedback on class understanding of a particular concept.

How:

- When I ask questions in class, you will be able to answer using Top Hat.
- You will also use Top Hat to report out from POGIL exercises.

Scoring:

- *80% will be awarded for participating, another 20% if the answer is correct.*
- *In-class participation points cannot be made up, even for excused absences.*

Exam Policies

A bit tedious, but important

MAKEUP EXAMS—I don't give them!

If you have extreme circumstances, see me as soon as possible. If you suddenly have reason to miss an exam (extreme sickness, car accident, etc.), you are responsible for contacting me as soon as humanly possible. If you know ahead of time that you cannot take an exam as scheduled (surgery, participation in an off-campus conference, etc.), talk to me as soon as possible to make other arrangements. My bus was late, I couldn't find a parking spot, I have a cold, etc., are not acceptable reasons to miss exams. Plan ahead and do what is necessary to ensure that you arrive to the exam in a timely fashion.

REGRADES—Turn them in right away through gradescope (< 7 days).

If you feel that your exam was not graded fairly, you may request a re-grade. We will be using a program called Gradescope to correct the parts of your exams that are not multiple choice. Submitting regrades will be done electronically. You will not get back the paper copy of your exam.

DROPPING LOW EXAM SCORE—Giving you a break ☺

At the end of the term, your lowest exam score will be dropped so that one bad day or busy week does not dramatically affect your final grade

EXAM STRUCTURE

Mid-term exams will be partly multiple choice and partly short answer. Mid-term exams in each POGIL section will be unique to that section. The final is cumulative and will be common to all POGIL-based sections.

CHEATING—Don't try it!

Although it is rare, some students will attempt to copy from other students' exams, bring in crib sheets, or otherwise cheat. Please be aware that it is relatively easy to detect these activities and that, if you are caught, the penalties are severe: 0 on the exam or an F in the course.

Getting Help

There are many resources for additional help. Please use them.

- **Prof. Garrett-Roe**
  - Office Hours
  - After class
  - By appointment
  - Email

  Due to the size of the class, I cannot answer emails on HW problems.

  Teaching Assistants (TAs):
  - Recitations
  - By appointment
  - Email

  TAs are also taking classes so please respect their requests regarding when/how to contact them.
- **Departmental Tutoring:**
  - http://www.chem.pitt.edu/undergraduate/tutoring. Meet on the balcony
- **Academic Resource Center (ARC)**
  - G-1 Gardener Steel Conference Center
  - https://www.asundergrad.pitt.edu/connected-community/peer-tutoring
  - **Private Tutoring:**
  - List of tutors at Dept. tutoring website
- **The Internet:**
  - Lectures, problems, and videos are widely available on the web.
- **Peers:**
  - Work with your classmates

Learning Environment Etiquette

Email, texting, etc.

The world will not end if you send one email or answer a text, but please turn off all audible notifications and limit your electronic communication.

Surfing, watching videos, reading, etc.

Multi-tasking doesn't really work in a science class and it is extremely distracting to me and the students in your vicinity if you are spending a significant amount of time focused on non-class related activities.

Talking

Outside of class participation exercises please do not talk. Even though the room is large, everyone will be able to hear you, including the instructor.

Arriving late; leaving early

If you must arrive late or leave early, please do so quietly and through the rear door. Routinely missing the first 5 minutes of class is a problem since announcements are often made during that time period.

Respect for all

Please be courteous and kind to your fellow students. Some students will struggle with concepts that you find easy. Offer help.

Contacting the instructor

Please contact me using email. For the fastest response, include all info that I need to answer the question and use your Pitt account/Blackboard. If you want to make an appointment, include a list of 3 available times along with the reason. Please write in full sentences and sign your email with your full name.

Blackboard

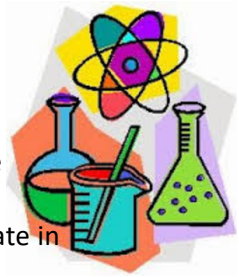
What you will find:

1. Announcements
2. Lecture notes
3. Calendar with exam dates and other deadlines
4. Syllabus
5. All other "handouts"
6. Scores/grades
7. Email addresses

Course Web/Blackboard

- All materials needed for the course will be deposited on Blackboard.
- You can get to Blackboard through "my.pitt.edu".
- Please consult Blackboard before you ask questions about the course, due dates, assignments, etc. If something is on Blackboard and you ask me for the info by email, I will simply refer you back. If you have already looked and you still have a question, explain the issue.
- If something is supposed to be posted and it is missing, email me (sgr@pitt.edu) and I will get it up asap.

How to do well in General Chemistry



- Spend 8-12 hours outside of class studying
- Attend class and participate in POGIL exercises
- Use resources to get help
- Prepare for lab
- Take homework seriously
- Do problems—as many as you can
- Study with your book closed and no distractions some of the time
- Work with other students
- Start preparing for exams early

"I knew the material but I couldn't answer the questions on the exam"

You may feel that you know a topic but unless you can use that knowledge to do a problem or address a conceptual question, your learning job is only half done. If you are unable to solve HW problems without looking up the information in the book, you have more work to do.

"I need an A!"

To get 93% of the points in this class is going to require a lot of effort, even if you had a great high school chemistry class. Lab is especially important in this context since no amount of studying will help you if you are not careful when you carry out the lab protocol. I recommend doing as many extra problems as possible to prepare for exams

"I can't do math and/or word problems!"

Math and science preparation varies dramatically from one student to the next. If you know that algebra and word problems are challenging for you, you will need to put in extra time. Start assignments early so that you can get help from tutors or peers if you get stuck.

If you need this class for your major or to get into a professional program later, you have to find a way to succeed. If you are willing to put in the time you can overcome the effects of previous bad, uncaring teachers or life circumstances that prevented you from studying in high school.

Other Policies

Letters of Recommendation: If you want a useful letter of recommendation at the end of the term, it is imperative that you go out of your way to make sure I know who you are. If you anticipate needing a letter in the future, arrange to make such a request by the end of the term—requesting a letter a year later is not as useful as I may not remember as many details then.

Religious Observances: I will make every effort to avoid conflicts between scheduled activities, such as exams, and religious observance dates. Please inform me asap if you identify such a conflict and I will work with you to resolve it.

G-Grades: In the case extenuating personal circumstances that prevent a student from completing the assigned work, a G-Grade will be granted if the student has taken the three hourly exams with a combined passing grade on them, and has regularly attended the lectures, recitation, and the lab. To arrange for a G-grade, a contract must be negotiated and signed with the Professor prior to the due date for current course grades. The work must be completed within one year. You should not request or be given a "G" grade if, in actuality, you need to repeat the course

Cheating/Academic Integrity: Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, from the February 1974 Senate Committee on Tenure and Academic Freedom reported to the Senate Council, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz or exam will be imposed. View the complete policy at www.cfo.pitt.edu/policies/policy/02/02-03-02.html.

Disability Services: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890/412-624-3346 (Fax), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course. For more information, visit www.studentaffairs.pitt.edu/drsabout.

Statement on Classroom Recording: To ensure the free and open discussion of ideas, students may not record or photograph any component, of classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

What is POGIL and why are we using it in this class?

"POGIL is an acronym for Process Oriented Guided Inquiry Learning. It is a student-centered, group-learning instructional strategy and philosophy developed through research on how students learn best.

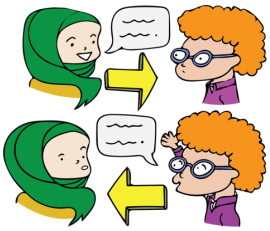
The effectiveness of POGIL has been assessed at a range of institutions and for a variety of courses. Several common, and important, outcomes are observed in all of these studies:

- Student attrition is lower for POGIL than traditional methods.
- Student mastery of content is generally higher for POGIL than traditional methods.
- Most students prefer POGIL over traditional methods."[1]
- POGIL exercises help you discover important concepts in chemistry for yourself rather than just being told something is true by your instructor. When you figure it out for yourself you tend to remember it better.

[1]https://pogil.org/about-pogil/what-is-pogil

Are we going to do POGIL 100% of the time?

We are going to use a mix of POGIL and more traditional lecture so that you see topics from multiple perspectives and have the best chance of learning.



How does a POGIL exercise work?

1) Your instructor will introduce the day's topic and give you any necessary background and directions.
2) Your group members will each have an assigned role:
   - Manager
   - Speaker or presenter
   - Reflector or strategy analyst
   - Recorder
3) You and your group will examine the model and try to understand what it means. Your workbook will guide you through various stages of comprehension and application with the goal of helping you and your group develop a deep understanding of one or more concepts.
4) A classroom facilitator will be available to help you if you have questions or ideas.
5) Your instructor will ask groups to pause at certain points and "report out" the answer to a question or two. Sometimes we will use white boards; sometimes we will use Top Hat.

Where is the answer key?

POGIL exercises are structured to help you "find" the answer with the help of your group. The process is the point so there is no answer key. You can consult your textbook or speak with your facilitator, instructor or TA later if you are confused but your goal will be to complete the process in such a way that you "know" if you are on the right track. Also, your instructor will review major concepts after the exercise so that you can check what you have done.