Course Syllabus

Jump to Today Edit

General Chemistry I

CHEM 0110 SEC 1235 and
CHEM 0410 SEC 1060

T, Th 1:00 – 2:15 pm
Instructor: Prof. Sean Garrett-Roe
Office hours: Study hall
Tues 2:15 – 3:15 pm Chevron (chalkboards outside the classroom)
Wed 4:00 – 5:00 pm Zoom (Join URL: https://pitt.zoom.us/j/97058817628)

Response to COVID-19 Pandemic

1. Due to the COVID-19 Pandemic, all information in this syllabus is subject to change.
2. If the instructor is not physically present in the classroom, either the instructor will be available via a monitor when teaching remotely, or another instructor will be present.
3. This class will use Canvas, Zoom, Aleks, Top-Hat, and Panopto to facilitate synchronous in-person and remote learning activities.
4. Class materials will be available via Canvas.
5. Office hours will be held in person once per week and via Zoom once per week.
6. Any change in mode of instruction, or other course adjustments, will be posted on Canvas.

What you need to buy


Textbook: Chemistry 2e OpenStax (https://openstax.org/details/books/chemistry-2e) Online and pdf download free: if you prefer a hard copy you can purchase the text in print for $47.
Homework system subscription ALEKS (Macmillan Learning) – $61.92 per term. You can link to it directly from the Canvas sidebar navigation.

Lab goggles You cannot enter the lab without them!

Lab coat You cannot enter the lab without it!

Lab manual Available through the Canvas page of your lab recitation section, which is different from this page.

Scientific calculator You will need one for exams and labs.

Course structure

This course has three major components,

- Whole class meetings
- Recitations
- Laboratory

Everyone attends the whole class meetings ("classes"), which are scheduled at the times listed at the top of the syllabus. If you are enrolled in CHEM 0110, you complete all three components of the course: class, recitation, and lab. If you are enrolled in CHEM 0410, you do not take the laboratory component of the course, but do attend both class and recitation.

Recitation and laboratory are scheduled together as one block of time, back-to-back, in the same room. Recitation is the first hour of the scheduled time block, and the actual lab experiment is the last three hours of the time. There are different TAs for the recitation and laboratory, and they will explain their different roles to you.

Whole class meetings

We will meet to actively explore the concepts in General Chemistry. Much of our time will be spent in working in teams engaged in Process Oriented Guided Inquiry Learning (POGIL) activities. Whole class discussion will follow. In-class questions (TopHat) throughout will also support your active engagement. Graduate and undergraduate teaching assistants will help answer questions in class.

Recitation and laboratory

https://canvas.pitt.edu/courses/161162/assignments/syllabus
Recitation is an opportunity for you to ask questions and practice your chemistry skills in a smaller group (24 students) with a teaching assistant (TA). You will complete the course’s assessments at the beginning of recitation, so recitation attendance is mandatory.

Laboratory is required for all CHEM 0110 enrolled students. Due to the organizational complexity, the laboratory runs somewhat independently from the lecture. The details of the expectations of the laboratory course will be explained by the Directory of the General Chemistry Labs (Dr. Tamika Madison). The lab involves pre-lab preparation, completing the in-person lab experiment, and a lab write-up.

Grading

Grades will be calculated based on total points and will be assigned according to the table (right, image below).

TBD

Scores for each category will be posted on Canvas in Grades as soon as they are available. Each area is described in more detail below.

Learning Objectives and Assessments

Learning Objectives. The course has 14 learning objectives, expressed at 4 levels of complexity from lower-level thinking to higher-level thinking. The learning objectives are listed in the Modules of the course. The learning objectives are listed for four levels of content mastery, Level 1: Retrieval, Level 2: Comprehension, Level 3: Analysis, and Level 4: Knowledge Utilization.

Mastery-based Grading. You will have assessments each week at the beginning of your recitation section. Each assessment will have four questions aligned with the learning objectives, one for each level. Each assessment item is graded on a proficient – not proficient basis. Proficient answers demonstrate mastery of the essential learning objective. Answers do not need to be perfect to be awarded proficiency! You will have up to three attempts for each assessment, and your highest score on any attempt will count towards your grade. The schedule of assessments is laid out in the calendar.

MAKEUP Assessments. If you cannot attend a recitation and lab session, you must coordinate with your TAs to complete a makeup session and complete an appropriate assessment. More than 2 make up sessions per term require instructor approval. Failure to organize an appropriate make-up with
Failure to organize an appropriate make-up with your TA will result in a 0 on that assessment attempt.

REGRADES—Request a regrade through the Gradescope platform right away (< 7 days). If you feel that an assessment item was not graded accurately, you may request a re-grade. Leave a comment using the "regrade" feature and describe your rationale.

Additional Platforms and Tools

Course Home-page (Canvas)

- All materials needed for the course will be posted on Canvas.
- You can get to Canvas through “my.pitt.edu”.
- Please consult Canvas before you ask questions about the course, due dates, assignments, etc. If something is on Canvas 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, use the Canvas Inbox to message me, and I will get it up asap.

Homework System (ALEKS, McGraw Hill)

Homework will be assigned through the ALEKS learning system.

Access Instructions

1. Find the link to ALEKS content in the Navigation bar on the left or in the Modules tab (on left below Syllabus).
2. Follow the instructions.
3. Select your access option and continue to your assignment page.
4. You are now enrolled in the course and can access future assignments through the links on the course page.

Help desk

ALEKS will host several Zoom meetings to help with any technical issues you may have.

The philosophy behind ALEKS

Like an athlete improves their body through training, you improve your mind through practicing. No amount of watching videos is a substitute for solving problems yourself. ALEKS provides you questions for each course topic until you have demonstrated that you have mastered the ideas. You can attempt each topic as many times as you need, and full explanations are provided to each
can attempt each topic as many times as you need, and full explanations are provided to each problem.

ALEKS Initial Knowledge Check

Within the first few days of your course, you will take your Initial Knowledge Check. The purpose of this check is to get to know you and to give you “credit” for any of the content of the course you may already know. This “credit” will be different for each student because each student has a unique math background – math courses taken, time since last math class, grades earned in those classes, etc. There is no right or wrong “grade” on the Initial Knowledge Check. Some students come in knowing about 10% of the course content. Comprehending more or less than 10% of the content is perfectly acceptable - you are in this course to learn the material, not to show that you already know it.

Your Path

The result of your Initial Knowledge Check is what ALEKS uses to create your own individualized learning path to work through the content of this course. You will next be asked to “Start your path.” ALEKS will start by asking you to work through topics you are most ready to learn.

Continue on your path to learn and master new topics. Watch your progress as you begin to fill in your pie!

Additional Knowledge Checks

ALEKS periodically gives you automatic knowledge checks based on the time you have spent in ALEKS and/or the number of topics you have learned. These knowledge checks are designed to see how well you are retaining the topics you have learned so that you will be ready for assessments. These knowledge checks impact the topics that are in your pie; so, use the knowledge checks as an opportunity to review and practice your previously learned topics.

Due dates

The ALEKS assignments will be due each week on Monday at midnight. The learning modules will be available for at least one week prior to the due date.

Technical Support

If you are having trouble registering for or accessing ALEKS, please contact ALEKS Customer Support. Live Chat, email, and phone support are available 7 days a week.

Website: [https://www.aleks.com/support](https://www.aleks.com/support)
Phone: 800-258-2374 (Sun 4pm–1am; M–Th 7am–1am; F 7am-9pm)

When contacting a support agent, you will always receive a case number. It will be important to save this case number if additional follow up or documentation is needed.

Check that your computer meets the system requirements by going here (https://www.aleks.com/support/system_requirements).

**TopHat**

We will use the student response system TopHat (link in the left navigation sidebar) to collect your thoughts during class. Use the links in the left column to access the course's TopHat page. Technology in the classroom is sometimes unreliable. Each student is given a ~30% buffer on the TopHat scores to account for all connectivity issues responding to TopHat questions in the classroom.

**Gradescope**

We will use Gradescope (http://www.gradescope.com) in the scoring and returning of assessments. When the first assessment is scored, you will receive an email explaining how to review your graded work.

**Getting Help**

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

**Prof. Garrett-Roe**

- Office Hours, Canvas message (Inbox, left), and by appointment

Due to the size of the class, I cannot answer emails on specific ALEKS problems; please contact your TA.

**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: List of free and non-free tutors](https://www.chem.pitt.edu/undergraduate/bachelor-science-chemistry/tutoring)
Study Lab (https://www.asundergrad.pitt.edu/study-lab) provides tools and resources for you to discover the most efficient and effective ways for you to study. Experiment with strategies to customize a plan that works for you. Explore how you can study smarter, not harder, and make the most of your time at Pitt.

Navigate Student (https://www.asundergrad.pitt.edu/schedule-tutoring-online-navigate-student) To make an appointment with a tutor, you will need to download a mobile app called Navigate Student. (https://www.asundergrad.pitt.edu/schedule-tutoring-online-navigate-student)

The Internet: Lectures, problems, and videos are widely available on the web.

Peers: Work with your classmates!

Respect in the classroom

I welcome everyone to my class, and everyone will be treated with respect by me, the teaching assistants, and all students. My belief in mutual respect and personal integrity guide me to help students from all backgrounds and identities feel welcomed and well-served by this course. If there are aspects of the design, instruction, or your experiences within this course that you feel are acting as barriers to your full participation or achievement, in any way, please bring them to my attention as soon as possible so that we can do better.

Additionally, the University of Pittsburgh does not tolerate any form of discrimination, harassment, or retaliation based on disability, race, color, religion, national origin, ancestry, genetic information, marital status, familial status, sex, age, sexual orientation, veteran status or gender identity or other factors as stated in the University’s Title IX policy. The University is committed to taking prompt action to end a hostile environment that interferes with the University’s mission. For more information about policies, procedures, and practices, see: https://www.diversity.pitt.edu/civil-rights-title-ix-compliance/policies-procedures-and-practices.

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

**G-Grades:** In the case of 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.

**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](http://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](http://www.studentaffairs.pitt.edu/drsabout).

**Statement on Classroom Recording:** In order to accommodate students’ needs during these unprecedented times, for the first two weeks of class, we will meet in synchronous (live) sessions both in person and using Zoom, the conferencing software. To allow for students to access these sessions asynchronously (at another time), the whole-class discussions will be recorded, which may include your participation in the session. Participating in the live sessions will provide the best learning experience for you. If you prefer not to participate in the recorded component for any reason, however, you may keep your video off and your microphone muted. TopHat and other response systems will also allow participation that is not identifiable on the video recording. Breakout rooms and small team discussions will not be captured in the recording.

The recorded lecture may be used by the faculty member and the registered students only for internal class purposes and only during the term in which the course is being offered. Use of the classroom technology and recording is governed by the Family Educational Rights and Privacy Act ([FERPA](https://nam05.safelinks.protection.outlook.com/?url=https://nam05.safelinks.protection.outlook.com/)).
url=http%3A%2F%2Fwww2.ed.gov%2Fpolicy%2Fgen%2Fguid%2Fpco%2Fferpa%2Findex.html&data=02%7C01%7Csgr%40pitt.edu%7C7b26070c344 ... f489e0a04eeb87cc3a526112fd0d%7C1%7C0%7C637329245369838609&sdata=82LdQBaCpEgGqAJ3kqhagXsFYJqZmEP3T3WXEu7MSu4%3D&reserved=0), which prohibits the release of most education records without student consent, and the University of Pittsburgh Student Handbook, Sections: Academic Integrity: Faculty and the Student Code of Conduct. I will not share recordings or screenshots of your class activities except to the course participants with the course. You may not share any recordings or screenshots of our class outside of this course. Violations are subject to the University of Pittsburgh Student Code of Conduct.

Other recordings for personal note-taking are allowed only as an accommodation for a qualifying disability (with a letter from DRS) or written permission from the instructor.

### Course Summary:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon Sep 5, 2022</td>
<td>📁 ALEKS: Review and Module 1.1</td>
<td>due by 11:59pm</td>
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<tr>
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<td><a href="https://canvas.pitt.edu/courses/161162/assignments/978696">https://canvas.pitt.edu/courses/161162/assignments/978696</a></td>
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<td>Wed Sep 7, 2022</td>
<td>📁 SGR Study Session</td>
<td>4pm to 5pm</td>
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<td>Thu Sep 8, 2022</td>
<td>📁 Reflection 2</td>
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<tr>
<td></td>
<td>📁 0 Prerequisite Knowledge [Mon recitations]</td>
<td>due by 11:59pm</td>
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<td><a href="https://canvas.pitt.edu/courses/161162/assignments/950546">https://canvas.pitt.edu/courses/161162/assignments/950546</a></td>
<td>(1 student)</td>
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<td>📁 0 Prerequisite Knowledge [Mon recitations]</td>
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<td>(21 students)</td>
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<tr>
<td>Sun Sep 11, 2022</td>
<td>📁 0 Prerequisite Knowledge [Mon recitations]</td>
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<td>(24 students)</td>
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0 Prerequisite Knowledge
[Mon recitations]
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/950546)
(21 students)

0 Prerequisite Knowledge
[Mon recitations]
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/950546)
(24 students)

Mon Sep 12, 2022
Module 1.2
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/978698)

Wed Sep 14, 2022
SGR Study Session
4pm to 5pm
(https://canvas.pitt.edu/calendar?event_id=1010749&include_contexts=course_161162)

Mon Sep 19, 2022
Module 1.3
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/978699)

Wed Sep 21, 2022
SGR Study Session
4pm to 5pm
(https://canvas.pitt.edu/calendar?event_id=1010750&include_contexts=course_161162)

Mon Sep 26, 2022
Module 2.1
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/978700)

Wed Sep 28, 2022
SGR Study Session
4pm to 5pm
(https://canvas.pitt.edu/calendar?event_id=1010751&include_contexts=course_161162)

Mon Oct 3, 2022
Module 2.2
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/978701)

Wed Oct 5, 2022
SGR Study Session
4pm to 5pm
(https://canvas.pitt.edu/calendar?event_id=1010752&include_contexts=course_161162)

Mon Oct 10, 2022
Module 2.3
due by 11:59pm
(https://canvas.pitt.edu/courses/161162/assignments/978702)
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<th>Date</th>
<th>Event Description</th>
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<td>Mon Oct 17, 2022</td>
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<td>Mon Oct 24, 2022</td>
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<td>Wed Oct 26, 2022</td>
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<td>Mon Oct 31, 2022</td>
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<td>Mon Nov 7, 2022</td>
<td><img src="https://canvas.pitt.edu/courses/161162/assignments/978707" alt="Module 4.1" /></td>
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<td>Mon Nov 14, 2022</td>
<td><img src="https://canvas.pitt.edu/courses/161162/assignments/978708" alt="Module 4.2" /></td>
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<td>Wed Nov 16, 2022</td>
<td><img src="https://canvas.pitt.edu/calendar?event_id=1010758&amp;include_contexts=course_161162" alt="SGR Study Session" /></td>
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Wed Nov 23, 2022

SGR Study Session
(https://canvas.pitt.edu/calendar?
  event_id=1010759&include_contexts=course_161162)

4pm to 5pm

Mon Nov 28, 2022

Module 4.3
(https://canvas.pitt.edu/courses/161162/assignments/978709)
due by 11:59pm

Wed Nov 30, 2022

SGR Study Session
(https://canvas.pitt.edu/calendar?
  event_id=1010760&include_contexts=course_161162)

4pm to 5pm

Mon Dec 5, 2022

Module 5.1-1
(https://canvas.pitt.edu/courses/161162/assignments/978710)
due by 11:59pm

Wed Dec 7, 2022

SGR Study Session
(https://canvas.pitt.edu/calendar?
  event_id=1010761&include_contexts=course_161162)

4pm to 5pm

Mon Dec 12, 2022

Module 5.1-2
(https://canvas.pitt.edu/courses/161162/assignments/978697)
due by 11:59pm

Tue Dec 13, 2022

ALEKS Total Grade
(https://canvas.pitt.edu/courses/161162/assignments/978711)
due by 11:59pm

Wed Dec 14, 2022

Pie Progress Goal
(https://canvas.pitt.edu/courses/161162/assignments/978705)
due by 11:59pm

0 Prerequisite [Practice upload]
(https://canvas.pitt.edu/courses/161162/assignments/950547)

0 Prerequisite Knowledge
(https://canvas.pitt.edu/courses/161162/assignments/950545)

1.1a Atomic structure
(https://canvas.pitt.edu/courses/161162/assignments/950548)

1.1a Atomic structure [MAKEUPs]
1.1b Atomic structure

1.1b Atomic structure [MAKEUPS/EXTRA TIME]

1.1c Atomic structure

1.2a Moles and nomenclature

1.2a Moles and nomenclature [MAKEUPs]

1.2b Compounds [MAKEUP/EXTRA TIME]

1.2b Moles and nomenclature

1.2c Moles and nomenclature

1.3a Chemical equations and solutions

1.3a MAKEUP/EXTRA TIME

1.3b Chemical equations and solutions
1.3b MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950561)

1.3c Chemical equations and solutions
(https://canvas.pitt.edu/courses/161162/assignments/950562)

2.1a Aqueous reactions
(https://canvas.pitt.edu/courses/161162/assignments/950563)

2.1a MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950564)

2.1b Aqueous reactions
(https://canvas.pitt.edu/courses/161162/assignments/950565)

2.1b MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950566)

2.1c Aqueous reactions
(https://canvas.pitt.edu/courses/161162/assignments/950567)

2.2a Enthalpy
(https://canvas.pitt.edu/courses/161162/assignments/950568)

2.2a MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950569)

2.2b Enthalpy
(https://canvas.pitt.edu/courses/161162/assignments/950570)

2.2b MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950571)

2.2c Enthalpy
(https://canvas.pitt.edu/courses/161162/assignments/950572)
2.3a Hess' law and calorimetry
(https://canvas.pitt.edu/courses/161162/assignments/950573)

2.3a MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950574)

2.3b Hess' law and calorimetry
(https://canvas.pitt.edu/courses/161162/assignments/950575)

2.3b MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950576)

2.3c Hess' law and calorimetry
(https://canvas.pitt.edu/courses/161162/assignments/950577)

2221 CHEM 0110 SEC1235 /
0410 SEC 1060 GENERAL CHEMISTRY 1
(https://canvas.pitt.edu/calendar?event_id=955283&include_contexts=course_161162)

2221 CHEM 0110 SEC1235 /
0410 SEC 1060 GENERAL CHEMISTRY 1
(https://canvas.pitt.edu/calendar?event_id=955284&include_contexts=course_161162)

2221 CHEM 0110 SEC1235 /
0410 SEC 1060 GENERAL CHEMISTRY 1
(https://canvas.pitt.edu/calendar?event_id=955285&include_contexts=course_161162)

2221 CHEM 0110 SEC1235 /
0410 SEC 1060 GENERAL CHEMISTRY 1
(https://canvas.pitt.edu/calendar?event_id=955286&include_contexts=course_161162)
3.3a MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950588)

3.3a Quantum Mechanical Model
(https://canvas.pitt.edu/courses/161162/assignments/950589)

3.3b MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950590)

3.3b Quantum Mechanical Model
(https://canvas.pitt.edu/courses/161162/assignments/950591)

3.3c Quantum Mechanical Model
(https://canvas.pitt.edu/courses/161162/assignments/950592)

4.1a Lewis Dot Model
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4.1a MAKEUPS
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4.1b Lewis Dot Model
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4.1b MAKEUPS
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4.1c Lewis Dot Model
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4.2a MAKEUPS
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4.2a Molecular Orbital Theory
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4.2b MAKEUPS
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4.2b Molecular Orbital Theory
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4.2c Molecular Orbital Theory
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4.3a MAKEUPS
(https://canvas.pitt.edu/courses/161162/assignments/950603)

4.3a Molecular Geometry and Polarity
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4.3b MAKEUPS
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4.3b Molecular Geometry and Polarity
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5.1a Ideal Gas
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ACS Exam
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CA20 WARM UP questions
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CA20 WARM-UP
(https://canvas.pitt.edu/courses/161162/assignments/950610)
CA5 The Shell Model (II)
WARM-UP
(https://canvas.pitt.edu/courses/161162/assignments/950611)

Extra credit for >85% OMET participation
(https://canvas.pitt.edu/courses/161162/assignments/950612)

Extra credit for ECoach Participation
(https://canvas.pitt.edu/courses/161162/assignments/950613)

Final retakes MAKEUP
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Laboratory
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MUST Formative Assessment
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Top Hat
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TopHat Buffer for Technology
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TopHat total
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