CHM 101
Introductory Chemistry
Course Syllabus, Fall Semester, 2024

Class Number: 62109 / 68280

Lecture Instructor/IOR: Alan K. Szeto, Ed.D.

Course Administration: This course is offered by the College of Integrative Sciences and Arts (CISA).

General Studies Gold

This course fulfills the ASU Scientific Thinking in Natural Sciences General Studies requirement.
Students completing a Scientific Thinking in Natural Sciences course will be able to:

1. *Obtain and interpret qualitative or quantitative data and communicate the findings.*
2. *Employ evidence to construct and test scientific hypotheses.*
3. *Assess the validity of scientific claims using evidence from biological or physical science.*
4. *Create models to explain observable phenomena and understand biological or physical processes in the natural world.*
5. *Communicate coherent arguments using evidence drawn from qualitative or quantitative sources.*

For more information about the college, visit our website: https://cisa.asu.edu/. If you have questions or concerns, please follow this link https://cisa.asu.edu/contact-us.

Course Description (in Class Search): Elements of general chemistry. Adapted to the needs of students in nursing and kinesiology and those preparing for general chemistry. Recommended for General Studies credit. Cannot be used for major credit in chemical or biochemical sciences.

Enrollment Requirement: None

Course Credits: 4

***Campus*:** ASU-Downtown Phoenix

Course Website: Canvas, available from August 21, 2024

Course Schedule in Fall 2024: See below. A *Course Calendar* with weeks/dates showing all associated lecture, recitation, and lab activities to be held each week can be found on Page 9 of this Course Syllabus.

Course Component	*Day*	*Time*	*Room*	*Instructor(s)*
Lecture (62109)	MWF	9:05-9:55 a.m.	BCLS 140	Szeto, Alan
Recitation (62346)	Tu	3:00-4:15 p.m.	UCENT 279	Brimner, Madison & Harroun, Nora
Recitation (75145)	W	3:00-4:15 p.m.	UCENT 286	Chandwadkar, A. & Doniker, H.
Recitation (62347)	F	10:30-11:45 a.m.	UCENT 286	Netzke, Kimberly & Pate, Nicole
Recitation (62345)	F	1:30-2:45 p.m.	UCENT 286	Jean-Louis, Junick & Shaw, Anushka
Lab (62348)	M	10:10 a.m.-12:00 p.m.	UCENT 310	Ellison, Lamar
Lab (63462)	M	12:20-2:10 p.m.	UCENT 310	Chandwadkar, Atharva
Lab (62349)	M	2:30-4:20 p.m.	UCENT 320	Pate, Nicole
Lab (67100)	M	4:40-6:30 p.m.	UCENT 310	Salkind, Maya
Lab (62350)	M	6:40-8:30 p.m.	UCENT 310	Teame, Meron
Lab (64222)	Tu	8:30-10:20 a.m.	UCENT 320	Netzke, Kimberly
Lab (75146)	Tu	10:30 a.m.-12:20 p.m.	UCENT 310	Travisano, Ellie

Lab (75147)	Tu	12:30-2:20 p.m.	UCENT 310	Travisano, Ellie
Lab (63177)	W	8:00-9:50 p.m.	UCENT 320	Bartz, Lynelle
Lab (62560)	W	12:20-2:10 p.m.	UCENT 320	Ladre, Jashan
Lab (63703)	Th	8:30-10:20 p.m.	UCENT 320	Ellison, Lamar

Course Component	***Day***	***Time***	***Room***	***Instructor(s)***
Lecture (68280)	MWF	12:20-1:10 p.m.	BCLS 140	Szeto, Alan
Recitation (69707)	Tu	12:00-1:15 p.m.	UCENT 234	Ladre, Jashan & Salkind, Maya
Recitation (68281)	Th	3:00-4:15 p.m.	UCENT 279	Reynolds, Anthony & Teame, Meron
Recitation (71087)	F	1:30-2:45 p.m.	UCENT 279	Feld, Jett & Netzke, Kimberly
Lab (68282)	M	8:00-9:50 a.m.	UCENT 310	Ellison, Lamar
Lab (70293)	M	2:30-4:20 p.m.	UCENT 310	Salkind, Maya
Lab (75149)	Tu	8:30-10:20 a.m.	UCENT 310	Feld, Jett
Lab (68283)	Tu	2:30-4:20 p.m.	UCENT 320	Teame, Meron
Lab (75150)	W	10:10 a.m.-12:00 p.m.	UCENT 320	Chandwadkar, Atharva
Lab (71088)	Th	10:30 a.m.-12:20 p.m.	UCENT 320	Bartz, Lynelle
Lab (75151)	Th	4:30-6:20 p.m.	UCENT 320	Jean-Louis, Junick
Lab (70721)	F	8:00-9:50 a.m.	UCENT 310	Netzke, Kimberly

Instructors' Details

Lecture Instructor/IOR: Alan K. Szeto, Ed.D.

Rank & College/School Affiliation: Assistant Teaching Professor, College of Integrative Sciences and Arts (CISA)-School of Applied Sciences and Arts

Office: UCENT 326, ASU Downtown Phoenix campus

UCENT stands for the *University Center Building* located on the Downtown campus.

Phone: (714) 757-2080 (This is my cell phone strictly for emergency use only.)

E-mail: Alan.Szeto@asu.edu (Please place "CHM 101" in the subject line to ensure delivery.)

Office Hours: Mondays, 1:30-3:30 p.m., Wednesdays, 1:30-3:30 p.m., Fridays, 1:30-2:30 p.m., or by appointment; all office hours will be held in UCENT 326 unless you want it on Zoom on a Tuesday or Thursday (Zoom link: https://asu.zoom.us/j/3345212703)

Instructional Aides (IA's):

Name	*E-mail*	*Office Hour(s)*
Bartz, Lynelle	lnbartz1@asu.edu	See Canvas
Brimner, Madison	mbrimner@asu.edu	See Canvas
Chandwadkar, Atharva	achandw1@asu.edu	See Canvas
Doniker, Helen	hdoniker@asu.edu	See Canvas
Ellison, Lamar	lbelliso@asu.edu	See Canvas
Harroun, Nora	nharroun@asu.edu	See Canvas
Jean-Louis, Junick	jjeanlou@asu.edu	See Canvas
Ladre, Jashan	jladre@asu.edu	See Canvas
Netzke, Kimberly	knetzke@asu.edu	See Canvas
Pate, Nicole	nlpate1@asu.edu	See Canvas
Reynolds, Anthony	ajreyno3@asu.edu	See Canvas
Salkind, Maya	msalkind@asu.edu	See Canvas
Shaw, Anushka	ashaw22@asu.edu	See Canvas
Teame, Meron	mteame@asu.edu	See Canvas
Travisano, Ellie	etravisa@asu.edu	See Canvas

All IA office hours will be held in the Science Hub (UCENT 360) unless it is virtual (by Zoom).

Chemistry Lab Coordinator:

Jett Feld
E-mail: jett.feld@asu.edu
Office: UCENT 362

Lab Manager/IA Coordinator:

Shannon Mullarkey
E-mail: smullarkey@asu.edu
Office: UCENT 360A

Course Details

Welcome to Chemistry 101: Introductory Chemistry at Arizona State University! CHM 101 is an introduction to chemistry covering Chapters 1-13 in *Introduction to Chemistry, 6th edition by Bauer, Birk, and Marks*. This course will cover the nature of atoms and elemental substances, the combination of atoms to form molecules and compounds, the interactions between atoms and molecules, chemical bonding models, relationships between chemical and physical properties, solutions, and a brief overview of energy, kinetics, equilibrium, and acids and bases. An emphasis is placed on conceptual understanding at both the macroscopic and molecular levels. Delivery of course contents will be through lecture attendance, recitation participation, laboratory work, and ALEKS. Lecture and recitation are well-integrated while laboratory investigations provide invaluable insights to students in terms of the scientific process.

The study of chemistry can be an exciting and rewarding experience when there is a joint effort among all instructors and students to work together. Learning chemistry for the first time can be a challenge because you are confronted with a strange, new language (e.g., with numerous terms and symbols) and must utilize your prior understanding of mathematical concepts and science skills (especially laboratory skills) for the synthesis of new ideas. Therefore, success is a matter of exposure, practice, and seeing the big picture. Learn to use your textbook properly by staying half-a-chapter ahead of your instructor and re-reading sections that you find confusing. After a lecture, read the pertinent sections again. It may take several rounds of re-reading to understand the material. Participation in recitation and laboratory is also critical in terms of exposure and practice. A complete list of learning objectives can be found in every chapter of the textbook to help you stay organized, connect ideas introduced in different chapters, and see the big picture. Do not hesitate to reach out to any of your instructors with questions. We will be fostering a culture of collaboration. Hence, get to know your fellow students as soon as possible.

The COVID-19 pandemic has brought unprecedented challenges to the world economy, including higher education. To be successful in my course, you must be proactive in your study of chemistry. Make sure you attend all course components and keep up with all assignments, especially ALEKS assignments. All of us in CHM 101 are here to assist you in this unique learning environment.

The use of technology in CHM 101 is consistent with the worldwide trend in education, higher education in particular, to provide you with an enhanced experience in learning beyond what is equipped in typical multimedia classrooms for face-to-face instruction. While connected to the Internet (via a personal cell phone and/or a laptop/tablet computer, for instance), you have access to the Canvas LMS, your e-textbook (*Bauer, Birk, and Marks*), and a new, virtual learning platform called ALEKS – a McGraw-Hill product. ALEKS contains what you might call "online homework" which gives you sample problems to solve from the textbook chapters and immediate feedback to your submitted answers without having to wait for the same from a human instructor/grader. Yet, the latest AI technology employed by ALEKS allows for your "problem-solving" experience to be customized according to your own personal learning needs. Hence, some ALEKS modules you will encounter in CHM 101 are known as *Knowledge Check's* (for adaptive assignments) while others are labeled generically as "Chapter X Assignment" (for non-adaptive assignments). Alternatively, certain YouTube videos and video channels often serve as sources of information that students enjoy using to enhance their understanding of chemistry while Googling (or using other comparable AIs) to search for direct answers to questions and problems posted by your instructors (including me) can generally yield fruitful returns. The use of YouTube, Google, and other apps to support your learning of chemistry is permitted to the extent that you should not rely solely on an AI (a hand-held calculator is not an AI) to do the work for you on, for example, a recitation assignment, a lab report based on an experiment that you performed, and any exam in CHM 101.

Alignment of Course Learning Outcomes with General-Studies-Gold Objectives

- *Firstly*, students will gain an understanding of matter and its properties at the atomic, macroscale, and symbolic levels. In addition, students will be able to:
- Analyze and interpret the periodic table to explain some properties of elements.
- Describe different types of compounds and their properties.
- Predict products of various types of chemical reactions.
- Use numerical quantities to perform calculations in relation to composition and behavior of compounds, elements, and solutions.
- Gain an understanding of energy changes associated with physical and chemical processes.
- Gain hands-on experience in the laboratory through designing and carrying out experiments, analyzing observations and data, communicating experimental results, all while adhering to safe laboratory practices.

Grading Details

Assessment	Points
Midterm Exams (4×100 pts.)	400
Final Exam	200
ALEKS/Class Work	100
Recitation Work	120
Laboratory Work	170
Lab Contribution Forms	10
TOTAL:	1000

Raw Percentage	Letter Grade
88% or above	A (Excellent)
76-87.9%	B (Good)
64-75.9%	C (Average)
52-63.9%	D (Passing)
0-51.9%	E (Failure)
	XE (Failure due to academic dishonesty)

Your instructor reserves the right to adjust your final letter grade based on the quality of your class participation. To calculate your course grade at any point during the semester, simply determine your overall percentage for each assignment type and use the following formula:

$$\text{Course Grade} = \frac{6.0}{10}\times(\text{Exam \%}) + \frac{1.8}{10}\times(\text{Lab \%}) + \frac{1.2}{10}\times(\text{Rec \%}) + \frac{1.0}{10}\times(\text{ALEKS \%})$$

Note that 60% of your final grade is based on exam performance. Although the other components of the course are important, you might consider the weight of exams in determining your time investment.

❖ ***Exams***

- ***Midterm Exams (400 points):*** Four 100-point exams will be given during the regular semester. Midterm exams will consist of multiple-choice questions. Scantron forms will be provided. In general, only material covered since the last exam will be included. However, because the course content builds through the semester and the final is cumulative, you should not forget what you have previously learned during the semester. **No exams will be dropped.**
- ***Final Exam (200 points):*** The final exam will consist of 50 multiple-choice questions worth 4 points each. The final exam is cumulative and will cover material from Exams 1-4 in addition to Chapter 13 content. **If you take all four midterm exams and the final exam, you qualify for the "Resurrection Final."** If your final exam percentage is better than one of your midterm exams, I will replace your lower exam score with your final exam percentage. **The final exam is not optional!**
- ***Missed Exams:*** An alternate exam may be administered **prior** to the scheduled time only in cases where travel for university-sanctioned function which cannot be rescheduled and interferes with an exam date. If such plans do interfere with an exam date, then it is your responsibility to schedule an alternate exam date prior to the scheduled date. This alternate date must be finalized

at least two weeks prior to the scheduled exam date. Keep in mind that if you end up taking an early exam, you will not benefit from the lecture material and recitation activities that have been planned to help you with the material. In cases of sudden illness, quarantine, or unanticipated emergency that prevents you from attending a scheduled exam, contact your instructor immediately. There are **NO** dropped exams!

- ***Recitation Work (120 points):*** These group activities will be performed in the recitation period. Your recitation instructors will describe the format of this class component in more detail at your first meeting. The activities will be provided for you when you arrive and turned in at the end of every recitation period. Answer keys for these assignments will be posted when all recitations for the week have met. Any suggested reading for the following recitation period will be announced at the end of each session. The final Recitation grade will be adjusted to a total of 120 points (12% of your overall grade). You must be present to complete a recitation to receive credit; you cannot expect to complete the recitation activities on your own.

- ***Online Homework (100 points):*** Online homework assignments will be assigned through ALEKS. Solving problems regularly outside of class time is one of the single best ways to succeed in this course. For additional practice in the textbook, it is strongly recommended that you complete all the in-chapter exercises and sample problems as well as some additional problems at the end of each chapter. Online homework assignments will be scaled to 10 points each and will be graded according to the percentage earned. A score of 80% or above will earn 10 points, 60 to 79% will earn 8 points, 40 to 59% will earn 6 points, and so forth. The mechanics of working up the online homework scores is rather tedious so adjusted scores will not be immediately available on Canvas. However, the final Homework grade will be adjusted to a total of 100 points (10% of your overall grade).

- ***Laboratory Work (180 points):*** In addition to the normal lecture periods each week, you have enrolled in a laboratory section that consists of 1 hour and 50 minutes of lab time. Your final grade in the lab will be based on several factors including submission of the lab reports, prelab assignments, lab notebook, poster and presentation, attendance, class participation, and complying with safety rules. These are mandatory sessions and are subject to the expectations outlined in the attendance policy below. Your lab grade will be assigned as follows: 10 points per lab report, 10 points for the lab notebook, 20 points for the presentation/poster session, and 10 points for lab instructor evaluation based on your conduct in the laboratory. The final Laboratory grade will be adjusted to a total of 180 points (18% of your overall grade).

  - ***Pre-labs:*** Since there is a limited amount of time to complete the investigations, some preparation on your part will be required outside of class. Important ideas are highlighted in pre-lab exercises. These exercises will be posted on Canvas the week before the lab is performed and should be completed BEFORE you enter the lab. **Without a completed pre-lab you may not enter the laboratory. Labs begin on time. Late arrivals will not be allowed into the lab.**

  - ***Lab Reports:*** At the beginning of the semester, you will be assigned to a group within which you will complete the lab investigations and write your lab reports. Each member of the group is required to make an equal contribution to efforts for which you will receive credit. Evaluations of contribution will be submitted by each member of the group along with your reports. These evaluations can be found in your lab manual directly following each investigation and are a part of your report grade. (You must submit a contribution form to receive credit for the lab report.) Contribution forms must be completed via Canvas and will not be accepted late. Your group is responsible for resolving issues of unequal contributions. If you are unable to do so, inform your lab instructor. Lab grades will be adjusted according to efforts contributed by each group member. Part of working in a lab environment is learning to work with new people that may do things differently than you. Your lab group will be chosen carefully by the lab instructor and will not be changed. Please do not complain to your lab instructor about your group members unless

you are unable to come to an understanding on your own. A simple discussion is usually sufficient to resolve most issues.

Your lab group will be expected to write lab reports for most investigations. Each report submitted must include the course (CHM 101), your lab instructor's name, the day and time you have lab, the names of all group members that contributed to the report, the date the report is submitted, and the investigation number and title. The reports must be typed and grammatically correct. The report will be graded on discussion of relevant chemistry, thoroughness, grammar, style, and appropriate format at the discretion of your lab instructor. If you are inexperienced at writing lab reports, you may want to check out one or more of the resources available online to assist in writing good reports.

Completed laboratory reports and contribution forms are due by **11:59 p.m. two business days after you complete the laboratory work**. Lab reports will be submitted via Canvas. If you submit a report deemed unacceptable, you are required to rewrite it. The flow chart later in this Syllabus explains the number of points possible for resubmitted papers.

Two of the lab reports will be written individually. You will not have an opportunity to resubmit an unacceptable individual report. It is in your best interest to work together on the group reports to develop good science writing skills before you must tackle a report on your own.

- ***Lab Notebook:*** Each student is required to purchase a lab notebook for use during the lab meetings. Everything done in the lab should be written down in the lab notebook. Writing things down on scratch paper is not acceptable. There are three required sections that must be present for each investigation performed: a proposal, procedures/observations, and the results of the investigation. The proposal is a brief description of the experiment that the group will perform. These **MUST** be approved and signed by your instructor before you begin the experiment. We realize that sometimes students may need to revise these proposals as the investigation proceeds; however, all changes must be approved by the lab instructor. The procedures should be written down while the experiment is being performed. If the group splits the work, each student should have an entire set of procedures before leaving the lab. Although complete paragraphs are not required in the notebook, your procedures should be detailed enough so that someone could retrace your steps using only your notebook. Finally, the results consist of the information gathered during the experiment and may include measurements, tables, graphs, figures, or any other type of raw data. As with all measurements, numbers should include a magnitude, unit, and degree of certainty. Copies of your notebook work will be submitted to your lab instructor at the end of each investigation.
- ***Poster and Presentation:*** Details will be provided as the semester progresses; however, information can be found in your lab manual.

Please keep track of your own grades so you know if something is awry. Make sure to keep ALL of your papers so that corrections can be made. You have a two-week limit to let us know about grading errors. After this, scores are considered permanent.

You are responsible for knowing the rest of the details in this Syllabus – Please read it carefully!

A. Canvas

Registering for this course means that you are enrolled automatically as a CHM 101 Canvas user. The CHM 101 course should appear as a link in *My Classes* when you login to MyASU. This site contains lecture notes/handouts, worksheets, practice exam questions, answer keys, recitation and lab activities, and other useful information. Note that the university's Academic Success Office might also have a Canvas shell associated with this course. This site is separate from the official CHM 101 course site maintained by the instructors. Although as mentioned before there is no substitution for attending classes in-person, the Canvas course shell is important for you to visit regularly to stay up to date with course information. It will help you succeed in this course.

B. Required Materials

- For this course, you will be required to purchase ALEKS, which will contain the Bauer, Birk, and Marks, *Introduction to Chemistry* 6e eBook. ALEKS provides the content and online homework for the lecture component of the course. Furthermore, we will be participating in *Inclusive Access* through the ASU Campus Stores (Follett) to ensure that you pay the lowest possible price for your ALEKS access. The cost for ALEKS will be approximately $86. You will not need to purchase a separate access code. See this Syllabus, Sec. C, *Inclusive Access*.
- If you would like to purchase a printed, loose-leaf textbook (not required), you may do so through ALEKS for an additional $32.
- The electronic lab manual for the course, *Laboratory Inquiry in Chemistry* (called *Mindtap* by the publisher) is also available through *Inclusive Access* for about $55 more.
- For all the course components you will need a scientific calculator capable of scientific notation and logarithmic functions. For lab, you will need a "carbonless" lab notebook, splash-proof safety goggles, and a lab coat. Face covering (due to COVID-19) is optional.
- *Optional:* Student Solutions Manual & Study Guide (two separate books)

C. Inclusive Access

We will be participating in the Inclusive Access "Opt Out" Program to ensure you pay the lowest possible price for your ALEKS access (the lecture textbook and online homework) and lab manual. You will begin receiving e-mails about the Inclusive Access "Opt-Out" Program 2-3 days prior to class and continue to receive periodic e-mail reminders through drop/add. About two weeks after drop/add, you will see a "materials fee" charge in your ASU account that will be titled: Digitally Integrated Course Materials. The combined cost for ALEKS ($86) and the lab manual ($55) will be approximately $140. Note that if you are repeating this course from last Fall or Spring semester, please let me know. I might be able to get you access without having to purchase the online materials again.

You may choose to opt out of Inclusive Access but know that you will likely pay a higher price for your ALEKS access. To opt out, simply click on the link (https://includedcp.follett.com/1234) which will open the "opt out" portal. You will click "Create an Account" and enter your ASU e-mail address. Please note: ASU e-mail addresses are configured in two different ways: *firstname.lastname@asu.edu* and *asurite@asu.edu*. The ASU system will only recognize one, so if the first configuration fails, try the second configuration (Helpful hint: the Follett system will match how your e-mail displays in https://asu.edu/directory). If prior to drop/add, you chose to "opt out" but you wish to opt back in, this option is also available through the portal.

If you are on a Pell Grant or other form of financial aid that covers textbooks, these instructions from the ASU bookstore might be helpful:

- The unspent balance of your Pell Grant will revert back to you (either by check or directly to your student account), usually 3-4 weeks after the close date.
- Since you are enrolled in an Inclusive Access class, check the amount of the discounted course charge either in your Syllabus or in the course catalog (https://bookstore.asu.edu).
- Hold this amount in reserve, i.e., do not spend it (for example, if your Pell Grant is $500 and the charge is $75, be sure to spend no more than $425).
- The Inclusive Access charge posts to your student account after drop/add, with a due date of the 25th of the month after classes start. By the time the charge is due, the balance of your Pell Grant will be disbursed to you and, if you have planned correctly, offset the charge.

D. Student Success

To be successful:

- check Canvas daily
- read announcements
- read and respond to course email messages as needed
- complete assignments by the due dates specified
- communicate regularly with your instructors and peers
- create a study and/or assignment schedule to stay on track
- access ASU Online Student Resources or CISA Academic Resources

E. Honors Content in CHM 101

If you are a Barrett Honors College student and interested in doing an Honors Enrichment Contract with me in CHM 101, please e-mail me as soon as possible but no later than Thursday, September 19, 2024 (by which date a proposal must be submitted online by the Barrett student).

F. Suggested End-of-Chapter Questions and Problems

I will provide on Canvas a list of problems at the end of each chapter that I suggest you work. If a given section of the textbook is not covered in class, an announcement will be made that this material is not included on an examination; the corresponding exercises can then also be omitted. If you need more practice with a particular skill or concept, I suggest trying the corresponding even-numbered problems. You should also do the in-chapter examples and practice problems as you're reading the chapter although no grade/credit will be formally given to you in the course.

G. Attendance Policy

Attendance at scheduled class lectures, labs, and recitations is essential and expected. Do not expect to consistently miss class and still do well. For example, if you miss three or more laboratory or recitation sessions, you will be assigned a failing grade for the course regardless of your overall grade.

Excused absences for assignments will only be given in the case of a documented, university-sanctioned event, if you are ill enough to see a physician, or if you must leave campus to be with an ailing family member. You are required to provide written proof for each of these situations, so please don't feel insulted when we ask for documentation.

Absences for illness, quarantine or self-isolation related to illness should be documented by a health professional and communicated to the instructor as soon as possible by e-mail.

Excused absences do not relieve students from responsibility for any part of the course work required during the period of absence. Faculty will provide accommodations that may include access to recordings of class content and make-up work.

H. No Generative AI Use Permitted

In this course, all assignments must be completed by the student. Artificial Intelligence (AI), including ChatGPT and other related tools used for creating of text, images, computer code, audio, or other media, are not permitted for use in any work in this class. Use of these generative AI tools will be considered a violation of the ASU Academic Integrity Policy, and students may be sanctioned for confirmed, non-allowable use in this course.

CHM 101: INTRODUCTORY CHEMISTRY
TENTATIVE COURSE CALENDAR
Fall 2024

DAY	DATE	MWF TOPIC (In-person)	LABORATORY (In-person)	RECITATION (In-person)
Week 1				
Th	8/22	--	--	--
F	8/23	CH. 1: Matter and Energy	--	--
Week 2				
M	8/26	CH. 1	#1: Safety Concerns &	#1: Scientific
Tu	8/27	--	#2: What's In the Flask?	Notation and Unit
W	8/28	CH. 1	*PPE Not Required*	Conversions
Th	8/29	--		
F	8/30	CH. 2: Atoms, Ions, and the Periodic Table		
Week 3				
M	9/2	*Labor Day Observed*	-No Lab-	#2: Nuclear Model
Tu	9/3	--	(All Week)	of the Atom
W	9/4	CH. 2	--	
Th	9/5	--	--	
F	9/6	CH. 3: Chemical Compounds	--	
Week 4				
M	9/9	CH. 3	#15: What Formulation	#3: Compounds
Tu	9/10	--	Makes the Best Toy?	and Nomenclature
W	9/11	CH. 3	(How to Write a	
Th	9/12	--	Lab Report)	
F	9/13	CH. 4: Chemical Composition		
Week 5				
M	9/16	CH. 4	#3: How Is Lab	#4: Moles and
Tu	9/17	--	Equipment Used?	Number of Particles
W	**9/18**	**EXAM #1 (Chapters 1, 2 & 3 Only)**		
Th	9/19	--		
F	9/20	CH. 4		
Week 6				
M	9/23	CH. 5: Chemical Reactions and Equations	#7: What Is a Copper	#5: Introduction to
Tu	9/24	--	Cycle? – First Week	Chemical Reactions
W	9/25	CH. 5		
Th	9/26	--		
F	9/27	CH. 5		

DAY	DATE	MWF TOPIC (In-person)	LABORATORY (In-person)	RECITATION (In-person)
Week 7				
M	9/30	CH. 6: Quantities in Chemical Reactions	#7: What Is a Copper Cycle? – Second Week	#6: Stoichiometry
Tu	10/1	--		
W	10/2	CH. 6		
Th	10/3	--		
F	10/4	CH. 6		
Week 8				
M	10/7	CH. 6	#8: What's In the Bottles?	#7: Energy and Heat Transfer
Tu	10/8	--		
W	10/9	CH. 6		
Th	10/10	--		
F	10/11	CH. 7: Electron Structure of the Atom		
Week 9				
M	10/14	*Fall Break*	-No Lab- (All Week)	-No Recitation- (All Week)
Tu	10/15	*Fall Break*		
W	10/16	CH. 7	--	--
Th	10/17	--	--	--
F	**10/18**	**EXAM #2 (Chapters 4, 5 & 6 Only)**	--	--
Week 10				
M	10/21	CH. 7	#10*: How Much Sodium Bicarbonate Is In the Mixture?	#8: Light Energy
Tu	10/22	--		
W	10/23	CH. 8: Chemical Bonding		
Th	10/24	--		
F	10/25	CH. 8		
Week 11				
M	10/28	CH. 8	#6: How Much Cobalt Is In the Soil? – First Week	#9: Bonding and Molecular Shapes
Tu	10/29	--		
W	10/30	CH. 9: The Gaseous State		
Th	10/31	--		
F	11/1	CH. 9		
Week 12				
M	11/4	CH. 10: The Liquid and Solid States	#6: How Much Cobalt Is In the Soil? – Second Week	#10: Gases
Tu	11/5	--		
W	11/6	CH. 10		
Th	11/7	--		
F	11/8	CH. 11: Solutions		

* = Individual lab report is required for this investigation

DAY	DATE	MWF TOPIC (In-person)	LABORATORY (In-person)	RECITATION (In-person)
Week 13				
M	11/11	*Veterans Day Observed*	-No Lab on 11/11-	-No Rec on 11/11-
Tu	11/12	--	#9: How Hot Is the Water? (Tu-M)	#11: Intermolecular Forces & Properties of Liquids (Tu-F)
W	**11/13**	**EXAM #3 (Chapters 7, 8 & 9 Only)**		
Th	11/14	--		
F	11/15	CH. 11		
Week 14				
M	11/18	CH. 12: Reaction Rates and Chemical Equilibrium		
Tu	11/19	--	#14*: What Factors Affect Chemical Equilibrium? & Plan Presentation/Poster (Tu-M)	#12: Chemical Equilibrium (Tu-F)
W	11/20	CH. 12		
Th	11/21	--		
F	11/22	CH. 12		
Week 15				
M	11/25	CH. 13: Acids and Bases		
Tu	11/26	--	-No Lab- (All Week Except M)	-No Recitation- (All Week)
W	11/27	CH. 13		
Th	11/28	*Thanksgiving Holiday Observed*	--	--
F	11/29	*Thanksgiving Holiday Observed*	--	--
Week 16				
M	**12/2**	**EXAM #4 (Chapters 10, 11 & 12 Only)**	Presentations/Posters *PPE Not Required*	#13: Semester Review (Mandatory)
Tu	12/3	--		
W	12/4	CH. 13		
Th	12/5	--		
F	12/6	Summary & Review for Final Exam		
Week 17				
M	**12/9**	**FINAL EXAM, 12:10-2:00 P.M. (For the MWF 12:20 p.m. Lecture)**	--	--
W	**12/11**	**FINAL EXAM, 7:30-9:20 A.M. (For the MWF 9:05 a.m. Lecture)**	--	--

* = Individual lab report is required for this investigation

I. Reminder of Time Commitment in this Course

The term "coursework" includes all learning activities not limited to reading, attending classes, studying, and completing assignments. Arizona Board of Regents (ABOR) requires 45 hours of coursework per credit for college-level courses, which translates to 180 total hours for this 4 credit-hours CHM 101 course. You should expect to work 12 hours per week on this course.

J. Communicating with your Instructor and Classmates

- ***Classroom Community*:** To build a course climate that is comfortable for all, it is important that you (1) display respect for all members of the class – including the instructor and students; (2) pay attention to and participate in all interactive student partner/instructor sessions and activities; and (3) observe the rules of appropriate online behavior (also known as *netiquette*). This term is defined by the instructor and includes keeping course discussion posts and oral communication with other students (or the instructor) focused on the assigned topics. You must maintain a cordial atmosphere and use tact in expressing differences of opinion. In addition, you must avoid racist, sexist, homophobic, or other negative language that may unnecessarily exclude course members. This is not an exhaustive list of behaviors; rather, it represents examples of the types of things that can have a dramatic impact on the course environment. Your final grade may be reduced each time you engage in the types of negative behaviors indicated above.
- ***Email:*** ASU email is an official means of communication among students, faculty, and staff. You are expected to read and act upon email in a timely fashion. You bear the responsibility of missed messages and should check their ASU-assigned email regularly. ***All instructor correspondence will be through your ASU email account.***

K. Campus Resources

There is clear evidence that students who take advantage of academic support services perform better academically. As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, and disability resources. Career and internship help and many opportunities to get involved in student clubs and organizations are also an integral component of campus life. Use the following links to get to know more.

- Tutoring: students.asu.edu/academic-success
- Counseling Services: students.asu.edu/counseling
- Financial Aid: students.asu.edu/financialaid
- Student Accessibility and Inclusive Learning Services (SAILS): https://eoss.asu.edu/drc
- Major/Career Exploration: uc.asu.edu/majorexploration/assessment
- Career Services: students.asu.edu/career
- Student Organizations: asu.edu/studentaffairs/mu/clubs/
- ASU Writing Centers: tutoring.asu.edu/writing-centers
- ASU Police Department: cfo.asu.edu/police
- International Student Resources: students.asu.edu/international/support/academic

L. Course Withdrawals

The course withdrawal deadline is Wednesday, November 6, 2024. A "W" grade will appear on your official academic transcript if you drop the course between September 5 and November 6, 2024. The complete session withdrawal deadline is Friday, December 6, 2024.

M. Grade Appeals

Students must first speak with the instructor of the class to discuss any disputed grades. If, after review, a resolution is not achieved students may proceed with the appeal process. Student grade appeals must be processed in the regular semester immediately following the issuance of the grade in dispute (by commencement for fall or spring), regardless of whether the student is enrolled at the university. Complete details are available in the ASU Grade Appeals policy.

N. Academic Integrity

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see provost.asu.edu/academicintegrity.

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, college, and/or dean. Academic dishonesty includes, but is not limited to, cheating on an academic evaluation or assignment, plagiarizing, academic deceit (such as fabricating data or information), or falsifying academic records. Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-plagiarism are subject to the same penalties as copying someone else's work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so.

In this course your lab work must meet the highest standards of academic integrity and scientific conduct. The following will not be tolerated:

- "Adjusting" data to get the "right" result. (This is falsification of data.)
- For labs that require running an experiment more than once, completing one run and inventing data for the others based on the first. (This is fabrication of data.)
- Partially completing an experiment but extrapolating some results. (This is fabrication of data.)
- Having a friend or lab partner conduct the experiment and submitting his or her data in your lab report. (This is inappropriate collaboration.)
- Copying and pasting sections of text, such as a description of an experimental method, into your lab report from material assigned for the course or any other source. (This is plagiarism.)

If you have any questions about your work and the academic integrity policy, please discuss your assignment or concerns with your instructor, teaching assistant, or your college Academic Integrity Officer in advance of submitting an assignment. Student resources on Sun Devil Integrity and strategies for completing your work with integrity and avoiding plagiarism are available here: ASU Student Resources for Academic Integrity or provost.asu.edu/academicintegrity.

O. Harassment Prohibited

ASU policy prohibits harassment on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, Vietnam era veteran status, and other protected veteran status. Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Contact the professor if you are concerned about online harassment of any kind, and he/she will put you in contact with the Dean of Students office.

P. Student Conduct

ASU and the College of Integrative Sciences and Arts (CISA) expects and requires its students to act with honesty, integrity, and respect. Required behavior standards are listed in the Student

Code of Conduct and Student Disciplinary Procedures, Computer, Internet, and Electronic Communications policy, ASU Student Academic Integrity Policy, and outlined by the Office of Student Rights & Responsibilities. Anyone in violation of these policies is subject to sanctions. Students are entitled to receive instruction free from interference by other members of the class. An instructor may withdraw a student from the course when the student's behavior disrupts the educational process per Instructor Withdrawal of a Student for Disruptive Classroom Behavior. The Office of Student Rights and Responsibilities accepts incident reports from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

Students must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

Q. Title IX

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at sexualviolenceprevention.asu.edu/faqs.

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, eoss.asu.edu/counseling, is available if you to wish discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, https://goto.asuonline.asu.edu/success/online-resources.html.

R. Disability Accommodations

Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to the instructor at the beginning of the semester either during office hours or by appointment. Note: Prior to receiving disability accommodations, verification of eligibility from the Student Accessibility and Inclusive Learning Services (SAILS) – formerly Disability Resource Center, DRC – is required. Disability information is confidential.

Web Site: eoss.asu.edu/drc
Downtown Phoenix Location: Post Office (POST), Suite 201
Phone: (480) 965-1234
E-mail: DRC@asu.edu

S. Statement on Inclusion

Arizona State University is deeply committed to positioning itself as one of the great new universities by seeking to build excellence, enhance access and have an impact on our community, state, nation and the world. To do that requires our faculty and staff to reflect the intellectual, ethnic and cultural diversity of our nation and world so that our students learn from the broadest perspectives, and we engage in the advancement of knowledge with the most inclusive understanding possible of the issues we are addressing through our scholarly activities. We recognize that race and gender historically have been markers of diversity in institutions of higher education. However, at ASU, we believe that diversity includes additional categories such as socioeconomic background, religion, sexual orientation, gender identity, age, disability, veteran status, nationality and intellectual perspective.

T. Mental Health

As a student, like anyone else, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These emotional health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. ASU Counseling Services provides counseling and crisis services for students who are experiencing a mental health concern. Any student may call or walk-in to any ASU counseling center for a same day or future appointment to discuss any personal concern. Here is the Web site: eoss.asu.edu/counseling. After office hours and 24/7 ASU's dedicated crisis line is available for crisis consultation by calling (480) 921-1006.

U. Establishing a Safe Environment

Learning takes place best when a safe environment is established in the classroom. In accordance with SSM 104-02 of the Student Services Manual, students enrolled in this course have a responsibility to support an environment that nurtures individual and group differences and encourages engaged, honest discussions. The success of the course rests on your ability to create a safe environment where everyone feels comfortable to share and explore ideas. We must also be willing to take risks and ask critical questions. Doing so will effectively contribute to our own and others intellectual and personal growth and development. We welcome disagreements in the spirit of critical academic exchange, but please remember to be respectful of others' viewpoints, whether you agree with them or not.

All incidents and allegations of violent or threatening conduct by an ASU student (whether on- or off-campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students. If either office determines that the behavior poses or has posed a serious threat to personal safety or to the welfare of the campus, the student will not be permitted to return to campus or reside in any ASU residence hall until an appropriate threat assessment has been completed and, if necessary, conditions for return are imposed. ASU PD, the Office of the Dean of Students, and other appropriate offices will coordinate the assessment in light of the relevant circumstances.

V. Prohibition of Commercial Notetaking Services

In accordance with ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date.

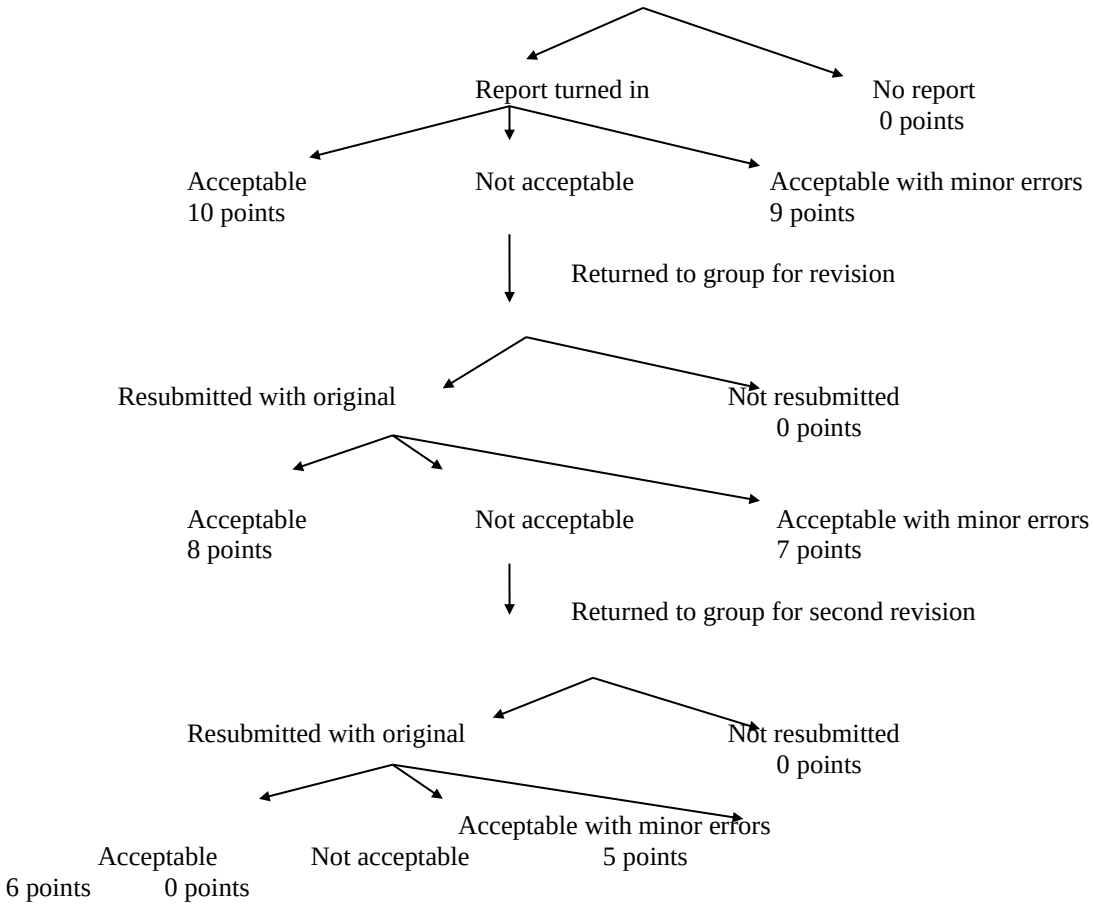
W. Course Evaluation

Students are expected to complete the course evaluation. The feedback provides valuable information to the instructor and the college and is used to improve student learning. Students are notified when the online evaluation form is available. The results are always anonymous and cannot be reviewed by the instructor/department until after final grades have been posted.

X. Syllabus Disclaimer

The Course Syllabus is an educational contract between the instructor and students. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make Syllabus changes necessary. The instructor reserves the right to make changes to the Syllabus as deemed necessary. Students will be notified in a timely manner of any Syllabus changes via e-mail, or in the Announcements section on Canvas.

GROUP LAB REPORT GRADING FLOW CHART



CHM 101
Suggested End-of-Chapter Questions and Problems
A Conceptual Introduction to Chemistry; Bauer, Birk, and Marks, 6th Edition

The following is a list of problems at the end of each chapter that I suggest you work. If a given section of the textbook is not covered in class, an announcement will be made that this material is not included on an examination; the corresponding exercises can then also be omitted. If you need more practice with a particular skill or concept, I suggest trying the corresponding even-numbered problems. You should also do the in-chapter examples and practice problems as you're reading the chapter.

Chapter	End-of-Chapter Questions and Problems
1	1, 2, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 35, 37, 43, 45, 47, 49, 51, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 79, 87, 89, 93, 97, 101, 105, 117, 147-157
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8	1, 2, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 29, 31, 45, 47, 49, 51, 53, 55(a, d, e), 61, 63, 87, 89, 91, 99, 101, 109, 113, 115, 119, 147-154, 157, 158
9	1, 2, 21, 27, 29, 35, 37, 39, 73, 87, 103, 109, 111, 154, 155, 156, 157, 158, 161, 162, 164
10	1, 2, 9, 11, 13, 15, 17, 19, 21, 29, 31, 47, 51, 53, 63, 65, 67, 69, 73, 75, 77, 99, 101, 109, 111, 113, 115, 117, 145-154
11	1, 2, 11, 15, 17, 27, 39, 41, 49, 51, 57, 61, 65, 87, 89, 95, 97, 101, 103, 105, 123, 129, 131-139
12	1, 2, 3, 9, 11, 15, 17, 19, 21, 25, 35, 37, 49, 51, 61, 65, 71, 91, 93, 101, 134, 137, 138, 139, 140
13	1, 2, 3, 5, 15, 17, 19, 27, 29, 31, 51, 53, 55, 57, 67, 69, 71, 73, 77, 79, 111, 113, 125, 139-148