

3 Credits

Course Description: This is an elective course for non-science majors. This course is designed to give you a feel for the role that chemistry plays in society. The incorporation of economic, social, and political issues are an integral part of this course; these disciplines affect chemistry and chemistry affects them. A basic level of understanding of chemical concepts and manipulations will arise from completion of this course. The course emphasizes conceptual understanding of chemical ideas but will include some mathematics as well because quantitative reasoning is an important part of how chemistry explains the world around us.

Lecture: In-person. TR, 11:00 am -12:15 pm, 1352 Gilman Hall.

Instructor: Dr. David Appy

Office: 3754 Gilman Hall

Email: dvappy@iastate.edu

Office Hours: Thurs. 1-2 pm and Fri. 9-10 am, or by appointment.

Course Materials:

1) Textbook - (Required) “Chemistry in Context”, 10th ed., Middlecamp et al. The e-book is automatically purchased and accessible through “Immediate Access Course Materials” in Canvas. You may opt out of Immediate Access within the first 10 days of class if, for instance, you would rather purchase a hard copy of the text through an external source.

2) Scientific Calculator – (Required) Any cheap scientific calculator will do (should either EE or EXP key). Cell phones may not be used as calculators. Graphing calculators are fine.

Canvas will serve as our official electronic course interface. Please check Canvas often for important announcements, course materials, and grade information. Visit www.canvas.iastate.edu

Classroom Technology Policy:

Allowed: Calculators and Electronic devices which lay flat (eg. tablet, ipad) used for class purposes only.

Not allowed: Cell phones, laptops with vertical screens.

Grading Structure:

Exams – 3 midterm exams (50 pts each, DROP 1 LOWEST) and 1 semi-cumulative final exam (75 points, cannot be dropped, do not make vacation plans that conflict with final exams)

Worksheets – 20 pts each – (approx.) 120 pts total – DROP 1 LOWEST

In-class (often group) exercises – 5 pts each (approx. 50 pts total) – DROP 3 LOWEST

Total ≈ 325 pts

Grading Scale:

The grading scale will be drawn by the instructor at the midterm and again at the end of the semester.

Drop Policy/Purpose of Dropped Assignments:

In this course the lowest: 1 midterm exam, 1 worksheet, and 3 in-class assignments will be dropped by semester’s end. The drop policy serves three purposes: 1) To accommodate sudden emergencies; 2) To eliminate the administrative burden associated with deadline extensions, etc.; and 3) To eliminate the need for the instructor to pass judgment on students’ circumstances.

Late Work:

Late work is not accepted under any circumstance. Emergency situations are covered by the drop policy.

Missing/Rescheduling Exams:

Exams may be rescheduled before or same-day as, but not after the actual exam. The exam may be proctored either in-person or virtually. Contact the instructor as far in advance as possible to reschedule an exam. No documentation or proof of excuse is required to reschedule a Midterm Exam, however rescheduling the Final Exam requires a legitimate excuse (not vacation). In cases of sudden emergency where the exam simply cannot be taken, the exam will be recorded as a zero and will be automatically dropped at semester's end per the drop policy.

Missing Lecture:

Attending lecture is your choice. If you miss lecture, it is recommended that you get notes from a classmate. In-class quizzes and assignments cannot be made up unless they are missed due to ISU-sponsored activity, in which case inform the instructor.

Regarding Review Sessions, Study Guides, and Accuracy of Assessments (Opinion of Dr. Appy):

When assessing knowledge, we should sample students' true field of knowledge on an average day, since that is the context in which the knowledge will be applied in the future. To the extent that we "prep" students for assessments, whether via review sessions, study guides, or even by disclosing the date, time, and/or content of the assessment, we introduce systematic error which always skews results in the direction of *overestimating* students' true field of knowledge on an average day.

Therefore, **study guides and review sessions will not be provided in this course.** Assessment dates, times, and approximate content will be provided, but with the disclaimer that these practices result in overestimation of the true field of knowledge on an average day. Students can mitigate this error themselves by not studying specifically for assessments, but rather by learning in time with the curriculum and taking assessments as if it were an average day. The goal is not to earn the highest possible score, but rather the *most accurate* score, which is beneficial long-term because accurate feedback is a necessary condition for learning.

Schedule for Chem 160 (Fall 2022)

Week	Dates	Topics/Events	Preparatory Reading
1	T 8/23	Introductions Syllabus Intro to Cost-Benefit Analysis	Syllabus
	R 8/25	Continue Cost-Benefit Analysis Least Biased News Sources	Article of the Week (visit Canvas)
2	T 8/30	Scale, Order of Magnitude, Metric Prefixes, Unit Conversions <i>Distribute Ch. 0 Worksheet (Introductory Material)</i>	
	R 9/1	Quantification, Precision	Article of the Week (visit Canvas)
3	T 9/6	Ch. 1 <i>Ch. 0 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	Text 1.1-1.3

	R 9/8	Ch. 1 <i>Distribute Ch. 1 Worksheet</i>	Article of the Week (visit Canvas) Text 1.4-1.6
4	T 9/13	Ch. 1	Text 1.7-1.8
	R 9/15	Ch. 1	Article of the Week (visit Canvas) Text 1.9-1.10
5	T 9/20	Ch. 2 <i>Ch. 1 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	Text 2.1-2.6
	R 9/22	Exam 1 (Introductory Material, Ch. 1)	
6	T 9/27	Ch. 2 <i>Distribute Ch. 2 Worksheet</i>	Text 2.7-2.12
	R 9/29	Ch. 2	Article of the Week (visit Canvas) Text 2.13-2.16
7	T 10/4	Ch. 3 <i>Ch. 2 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	Text 3.1-3.3
	R 10/6	Ch. 3 <i>Distribute Ch. 3 Worksheet</i>	Article of the Week (visit Canvas) Text. 3.4-3.6
8	T 10/11	Ch. 3	Text 3.7-3.10
	R 10/13	Ch. 3	Article of the Week (visit Canvas) Text 3.11-3.12
9	T 10/18	Ch. 4 <i>Ch. 3 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	Text 4.1-4.3
	R 10/20	Exam 2 (Ch. 2, 3)	
10	T 10/25	Ch. 4 <i>Distribute Ch. 4 Worksheet</i>	Text 4.4-4.6 (just browse calculations in 4.4)
	R 10/27	Ch. 4	Article of the Week (visit Canvas) Text 4.7-4.9
11	T 11/1	Ch. 4	Text 4.10-4.12
	R 11/3	Ch. 5 <i>Ch. 4 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	Article of the Week (visit Canvas) Text 5.1-5.4
12	T 11/8	Ch. 5 <i>Distribute Ch. 5 Worksheet</i>	Text 5.5-5.9 (just browse calculations in 5.5)
	R 11/10	Ch. 5	Article of the Week (visit Canvas) Text 5.10-5.13
13	T 11/15	Flex Day <i>Ch. 5 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	
	R 11/17	Exam 3 (Ch. 4, 5)	
Thanksgiving Break 11/21-11/25			
14	T 11/29	Ch. 7 <i>Distribute Ch. 7 Worksheet</i>	Text 7.1-7.3

	R 12/1	Ch. 7	Article of the Week (visit Canvas) Text 7.4-7.7
15	T 12/6	Ch. 7	Text 7.8-7.10
	R 12/8	Flex Day <i>Ch. 7 Worksheet Due – 11:59 pm, pdf only, Canvas</i>	
Final Exam – Wed. Dec. 14, 9:45 – 11:45 am, Gilman 1352			

*ISU Final examinations policy will be followed absolutely (<http://www.registrar.iastate.edu/exams/>).