

CHEM 142 B  
General Chemistry  
Course type: Face-to-Face

Evaluation Delivery: Online  
Evaluation Form: B  
Responses: 320/609 (53% high)

Taught by: Colleen Craig, Damian Dunford, Raymond Jin  
**Instructor Evaluated: Colleen Craig-Lecturer**

**Overall Summative Rating** represents the combined responses of students to the four global summative items and is presented to provide an overall index of the class's quality:

Combined Median	Adjusted Combined Median
<b>3.9</b>	<b>4.7</b>
(0=lowest; 5=highest)	

**Challenge and Engagement Index (CEI)** combines student responses to several *IASystem* items relating to how academically challenging students found the course to be and how engaged they were:

<b>CEI: 5.4</b>
(1=lowest; 7=highest)

## SUMMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	Adjusted Median
The course as a whole was:	319	23%	33%	32%	10%	2%	1%	3.7	4.5
The course content was:	319	20%	35%	32%	11%	1%	1%	3.7	4.3
The instructor's contribution to the course was:	319	42%	31%	18%	7%	1%	1%	4.3	5.0
The instructor's effectiveness in teaching the subject matter was:	319	39%	30%	23%	6%	1%	1%	4.2	5.0

## STUDENT ENGAGEMENT

	N	Much Higher (7)	(6)	(5)	Average (4)	(3)	(2)	Much Lower (1)	Median
<b>Relative to other college courses you have taken:</b>									
Do you expect your grade in this course to be:	315	4%	15%	21%	31%	16%	5%	7%	4.2
The intellectual challenge presented was:	316	20%	37%	25%	14%	1%	2%	1%	5.7
The amount of effort you put into this course was:	314	23%	37%	20%	12%	6%	1%	2%	5.8
The amount of effort to succeed in this course was:	315	34%	37%	19%	7%	2%		1%	6.1
Your involvement in course (doing assignments, attending classes, etc.) was:	316	31%	33%	17%	14%	4%		1%	5.9

On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?

**Class median: 10.8 Hours per credit: 2.2 (N=309)**

Under 2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22 or more
1%	3%	9%	14%	13%	17%	15%	13%	6%	5%	3%	4%

From the total average hours above, how many do you consider were valuable in advancing your education?

**Class median: 7.6 Hours per credit: 1.5 (N=308)**

Under 2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22 or more
3%	8%	19%	19%	15%	15%	9%	6%	3%	2%	1%	1%

What grade do you expect in this course?

**Class median: 3.1 (N=308)**

A (3.9-4.0)	A- (3.5-3.8)	B+ (3.2-3.4)	B (2.9-3.1)	B- (2.5-2.8)	C+ (2.2-2.4)	C (1.9-2.1)	C- (1.5-1.8)	D+ (1.2-1.4)	D (0.9-1.1)	D- (0.7-0.8)	F (0.0)	Pass	Credit	No Credit
4%	21%	22%	14%	14%	8%	8%	3%	3%		1%		1%		1%

In regard to your academic program, is this course best described as:

**(N=307)**

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
44%	27%	2%		24%	3%

STANDARD FORMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	Relative Rank
Course organization was:	313	33%	35%	24%	8%			4.0	6
Sequential presentation of concepts was:	315	32%	34%	25%	8%			4.0	10
Explanations by instructor were:	316	39%	29%	23%	7%	1%	1%	4.1	5
Instructor's ability to present alternative explanations when needed was:	316	36%	32%	19%	10%	1%	1%	4.1	9
Instructor's use of examples and illustrations was:	316	42%	35%	17%	5%			4.3	4
Instructor's enhancement of student interest in the material was:	316	32%	31%	24%	9%	2%	1%	3.9	7
Student confidence in instructor's knowledge was:	314	55%	26%	15%	4%			4.6	2
Instructor's enthusiasm was:	315	66%	20%	10%	3%			4.7	1
Clarity of course objectives was:	316	37%	34%	20%	8%	1%		4.1	3
Interest level of class sessions was:	314	27%	31%	29%	10%	3%	1%	3.8	11
Availability of extra help when needed was:	315	30%	31%	27%	9%	3%	1%	3.9	16
Use of class time was:	316	33%	34%	23%	9%	2%		4.0	8
Instructor's interest in whether students learned was:	313	35%	29%	23%	10%	2%	1%	4.0	15
Amount you learned in the course was:	315	29%	30%	28%	11%	1%	1%	3.8	13
Relevance and usefulness of course content were:	314	31%	33%	23%	11%	2%	2%	3.9	14
Evaluative and grading techniques (tests, papers, projects, etc.) were:	315	25%	29%	23%	16%	4%	3%	3.6	17
Reasonableness of assigned work was:	316	26%	28%	27%	14%	4%	1%	3.6	18
Clarity of student responsibilities and requirements was:	316	35%	29%	25%	8%	2%		4.0	12

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## STANDARD OPEN-ENDED QUESTIONS

### Was this class intellectually stimulating? Did it stretch your thinking? Why or why not?

1. I already knew most of the content in this course because I took IB chemistry last year in high school. However, because UW doesn't value IB the same as AP, I wasn't good enough to get course credit. Clearly to me, taking this class and having it be this easy means that IB classes should be worth more in the eyes of the university so that people like me don't have to waste their time and money.
2. Yes. Exploring deep into individual concepts broaden my perspectives.
3. Yes
4. Yes, since I had no prior knowledge in the subject, it was all new information that demanded extensive thought.
5. The class was a review for me because of Ap Chem, so I didn't feel a lot of stretching in my thinking.
6. I took AP Chemistry in high school so this class was more of a review.
7. Yes, the end of chapter questions were pretty difficult. Some questions on the practice exams were hard.
9. Yes it required me to really focus and understand concepts.
10. I felt like this class did stretch my thinking since it gave me a new perspective with which to view chemistry and how it impacts out lives.
11. No, I had learned most of the material beforehand so it was just review.
12. The coyrse didn't make me think too much, but more on the lines of whether or not I had time to spend on this course or not.
13. It stretched my thinking because some of the concepts were difficult, and some of the calculations were long and hard to follow.
14. Yes because it went deeper into concepts than my high school chemistry class.
15. No. definitely made me have to think much more outside of what was taught which was very difficult and not at all helpful. Class is designed for failure. It made me only want to learn the concept not because it is interesting but so that I can get a good grade
16. Yes; however I expected the pace to be a lot faster and the exam difficulty to be much higher. The last time I took a Chemistry class was freshman year in high school and I that classes tests were more difficult.
17. It was very stimulating and stretched my thinking as I spent many hours trying to complete assignments and understand concepts.
18. Yes, chemistry is not a subject i excel at and find it hard to grasp so this class was challenging and stimulating
19. Yes, the class challenged me to actually understand material instead of just regurgitate it back.
20. Yes, she provides us example problems to work on and explained them very well.
21. Yes. Reinforced my prior chem knowledge and brought new topics into view.
22. Not as much. I have taken an AP Chem course in highschool and this was review
23. No because I took AP chem which covered all the material in high school.
24. It did stretch my thinking more for the parts I didn't understand in high school.
25. Yes, I was thoroughly challenged throughout the course and many new and challenging ideas were introduced.
26. Yes, it required me to think about all concepts.
27. Yes, the examples you gave really helped.
28. Yeah, I had to work a lot harder to understand concepts so I think it made me think in different ways.
29. Yes, material was presented in an intriguing and fun way that encouraged new views on issues.
30. yes, had to think in a different way than other science classes
31. Yes this class is intellectually stimulating. It stretched my thinking as I did my best to wrap my head around concepts. Chemistry is not my best subject so I feel I had to put in extra hours of review and homework in order to do better.
32. Sort of.
33. No it was a more intense high school chem
34. Yes. Dr. Craig made this topic very interesting and intellectually stimulating. I knew some of the content from the AP course, but this class went more in depth and helped me to really understand.
35. Yes very much so, because I haven't done any chemistry since sophomore year of high school.
36. Yes, even though I'd learned a lot of the material covered in high school, I was challenged to really understand every bit of it in the class as opposed to simply memorizing concepts for exams like in high school
37. The class was intellectually stimulating. I learned about new concepts and how those concepts could be applied to real life scenarios.
38. Yes, learned a lot

39. Yes it was, the course extended my thinking from high school chemistry.
40. Yes, it showed me how under prepared I was having only previously taken one chemistry class in high school.
41. The class was stimulating and allowed me to dwell deeper into basic chemistry material
42. This class was intellectually stimulating and taught me new info, but the info was not necessarily up for debate, so I could not say it stretched my thinking.
44. Yes, and the class has increased my interest greatly towards Chemistry as a subject
45. It is hard to say because this is not a class that I am necessarily interested in but rather was told I should take it to keep my options open for majors. With that being said, the content was difficult enough to keep my attention, but not overwhelming. Also, Professor Craig did a good job keeping the lectures intellectually stimulating.
46. A lot of the concepts really stretched my thinking especially dual nature of light.
47. This class, in general, was intellectually very stimulating. It required lots of background knowledge, as well as lots of self-studying to catch up with the speed of the class.
48. It was not intellectually stimulating because none of the information presented was not new.
49. Yes, because chemistry has very complicated concepts that go into every topic, challenging me to study harder.
50. Yes
51. yes. Yes, I learned a lot about very small things in the air and around me.
52. Yes. Yes. It forced me to learn new content that I never knew.
53. Yes, the material was challenging and required lots of effort.
54. Sometimes questions were trickier than I expected.
55. Most of the material was review from when I took chemistry in high school. However, I thought that Dr. Craig's way of teaching was refreshing and thorough, and it meant that it brought my understanding of these topics to a deeper level.
56. yes, aeks is bs, quizzes are bs,
57. Yes the material was tough so it took a lot of focus and attention
58. Yes, because this was my first chemistry course outside of high school.
59. Craig gave a lot of good real world examples and scenarios that were helpful to grasp concepts.
60. This class was intellectually stimulating because it covered chemistry topics I have never explored before.
61. This class was very intellectually stimulating and made me use my own knowledge a lot more than my other classes have. It was a difficult class and the prof by no means made it easy which made me rely on myself and my own skills a lot more.
62. I didn't think the class was intellectually stimulating so much as it was excessively challenging. It didn't expand my problem solving skills or stretch my thinking, and the tests are designed so that students will get a 65% average, which forces us to stress about our grade instead of actually thinking about the material.
63. It helped me visualize certain concepts which I couldn't visualize before.
64. Yes
65. It was but very stressful, thinking about grades.
66. Class was intellectually stimulating in the sense that it made me think about material I've never considered nor cared about prior to enrolling into the course. It made me think in different aspects and perspectives.
67. it was stimulating and stretched my thinking because i havent taken chemistry before
68. Yes
69. I learned new concepts in this class but I had a hard time finding them intriguing because they were difficult to understand.
70. Yes I found it challenging but doable
71. Not especially. But mainly because once the concepts were explained, it made sense that the world was that way; I wouldn't have thought up the theories myself, but they seemed quite logical and believable.
72. Yes, examples were often harder than testing questions.
73. Yes the class was difficult and made me think.
74. Yes it did because chemistry is not my strength
75. Yes, this class was challenging and stimulating. It was difficult at times but there was lots of practice and conceptual explanation and therefore I learned a lot.
76. Yes, it provided complex examples that integrated various concepts we had learned throughout the year into one question, which encouraged me to think in a different way than I was used to. It challenged me in a positive way!
77. I have ready taken this course in high school but Ms. Craig did an amazing job strengthening my basic understandings of the subject.
78. This class did a good job introducing general chemistry and was about as expected.
80. Yes this class was very interesting. I have honestly learned so much throughout the course, since I came in remembering very little chemistry.
81. Yes, chemistry always is. Most times it is logical, other times completely illogical but your class grounded the material. You made it very easy to be a student without dumbing down the material.
82. Yes, it definitely tested your intelligence and expand your knowledge.
83. at times it was. sometimes it jest felt like busy work. concepts were pretty interesting in general but homework at times seemed intentionally as hard as possible, which made it discouraging to actually want to do it and learn from it

84. It did, the concepts presented were challenging but they were also reasonable in terms of my ability to learn.
86. This class was intellectually stimulating and did stretch my thinking because the course required an in-depth understanding and exploration of the topics covered in order to do well on ALEKS, the labs, the quizzes, and the exams.
87. This course was intellectually stimulating, it made me learn a lot more about chemistry than I did in high school.
88. Yes, the exams are very different than the practice exams and review worksheets. The content and questions on exams required much more thinking.
89. This class definitely intellectually stimulating. I learned a lot about chemistry and the topics were challenging.
90. This class stimulated my intelligence because the content of the course was very challenging and caused me to work carefully through most of the concepts.
91. I guess. Makes you think about chem.
92. Yes, this class was very engaging and the way that it was taught was very interesting.
93. Despite the fact that it is intro chemistry, Professor Craig still managed to make the course interesting.
94. This course was intellectually stimulating because it really forced you to think.
96. Yes, Craig knew how to ask questions that encouraged deeper thought about the subject she was teaching.
97. This class was good because Professor Craig did a good job introducing the concepts but letting us figure out how to master the concepts on our own.
98. yes
99. This class did stretch my thinking, but in the most negative way possible. This class made me feel discouraged, unworthy and incapable of being a student at UW (as a sophomore). My mental health has never been so messed up due to academics.
100. Yes, because its content was sometimes something that wasn't physically visible.
101. This was a stimulating class because I learned many new things
102. Yes, it was very rigorous.
103. Yes because I had no previous background in chemistry so every topic was new.
105. The class was stimulating because it didn't just go into high school level topics, it dove into the deeper meaning and gave greater understanding
106. this course inspired me and I improve my learning habits
107. Yes. Chemistry was a difficult class and requires a lot of effort. It's not unmanageable but it definitely makes you work hard.
108. Yes, many examples were displayed via relevancy to labs, real life and diagrams.
110. Yes
111. Yes, it was very intellectually stimulating. I had to attend every lecture and do all the ALEKS for each week to succeed.
112. Yes, this class was intellectually stimulating. Since I have never taken a chemistry course before, this course forced me to learn a great amount of material in a short amount of time.
113. Yes it is intellectually stimulating because I was learning topics that I have never learned in high school
114. Yes everything we did made me think.
115. Yes because it is new to me
116. Yes, Dr. Craig was very good at introducing new topics to us and then relating them to ideas that we were already familiar with.
117. It was intellectually stimulating because the exam problems given to us required us to have a full understanding of the concepts that are taught.
119. This class was intellectually stimulating because I enjoy learning about chemistry.
120. I have taken a very similar course before, so this did not stretch my thinking very far.
122. Yes, it filled in holes in my previous knowledge from high school chem.
123. Not as much because I did Chemistry in the IB and hence pretty much knew everything that was being taught
124. Yes, required me to study and actively engage with material to learn.
125. All lectures were very interactive and had many examples that helped my ability to understand the concepts better.
126. Yes, I learned new topics in chemistry that I did not know before.
127. It was a lot harder than I was expecting. Many of the concepts have to do with previous contents that were learned early on and a lot of the time, it was just tough to tie everything together because it made you think hard and apply.
128. Yes, it was a good opportunity to learn basics of chemistry
129. Yes through all the lab reports and quizzes
131. No, because ALEKS and the course did not lineup at all so for the first half of the quarter I was expected to know twice as much info than normally would be needed meaning I had to study twice as much to keep up.
132. It did stretch my thinking because although I touched various topics that were prevalent in my high school chemistry, I learned new things and it was much more challenging than the content that was taught in high school.
133. yes, because it tells about the basics of chemistry.
134. Yes, her presentations went beyond just the basic content, so you had to think a little harder.
135. Yes. I had taken Chemistry my sophomore year and learned the very basics of the topics we learned this quarter. Expanding on those topics and going into the why and how stretched my thinking and pushed me to question the world around me.
136. The level of chemistry taught in this course was very in depth and stimulated my mind in order for me to understand the concepts taught.

137. This class was intellectually stimulating because of the difficulty of the material.
138. No, because I just wanted to do good on homework and tests.
139. Yes, chemistry is a very conceptual subject
140. Yes, the labs really helped with further explanations for the subjects taught.
141. It stretched my thinking because of my unfamiliarity with chemistry before this course
142. Yes, it helped me internalize the concepts and make sure I know it.
143. The class stretched my thinking by introducing new and unfamiliar topics.
145. yes
146. Yes, the class was very difficult.
147. Yes. A lot of times it felt like it was unnecessarily hard - concepts that could be taught easily were made very complex.
148. Yes, very much so. Chemistry is so hard, and I usually don't think in a "science-like-way" in general, so training my brain to understand topics was difficult.
149. N-A
150. Yes, due to the application of abstract concepts (through labs and problem solving)
151. Yes and yes, this is because the course covered a large amount of topics.
152. Yes, this class was very challenging, because I had to learn so many concepts.
153. This class was intellectually stimulating. It did not however, cover material that I have never heard of before.
154. Yes. Yes it did.
155. Yes it did. The topics we covered this quarter were taught in more detail than I am used to, which meant that I learnt a lot more and thought of familiar concepts in new ways.
156. A large portion of the content was relearning for me, so most of it wasn't too challenging.
157. It wasn't vey stimulating, it was more stressful than making me want to pursue it even more. I felt difficult and very fast paced.
158. It was more challenging and required a large amount of memorizing rules and exceptions to rules than I had expected.
159. Yes, the class as a whole was extremely intellectually stimulating. The course definitely required dedication of time and effort outside of lectures and lab hours.
160. yes
161. Yes because it is all new material, but also no because it was unclear what basics need to be known as a good foundation for success.
162. yes
163. This class was mostly review of chemistry topics learned in high school. Since I learned them poorly in high school, it was extremely valuable, but not intellectually challenging on a conceptual scale.
164. Yes, many of the concepts were new to me and required me to think in new ways to comprehend.
165. This class was intellectually stimulating, and I learned a lot of new material, and Dr. Craig did a very good job of teaching.
166. this class was extremely hard and stretched my thinking but not in a good way
167. yes, it stretched my thinking greatly.
168. No really because I took AP Chemistry
169. Yes this class was intellectually stimulating and stretched my thinking because concepts are of a higher level of thinking and take practice to understand.
171. This class was definitely a challenge and so it stretched my thinking because I had to learn abstract topics and unfamiliar subject matter.
172. This class was intellectual stimulation because it did indeed stretch my thinking and made me remember parts of my freshman year chemistry that I took. Information was presented in a manner that was fun to learn, and made me think to ensure I was doing the questions properly.
173. Yes, this class was intellectually stimulating and it stretched my thinking because the material was quite difficult and new to me.
174. It's pretty good, I like it, My first college level chemistry
175. Yes. Tests were very challenging
176. This class was challenging and thus was intellectually stimulating as it provoked me to think in different ways and explore new topics.
177. Yes this class was intellectually stimulating.
178. Yes
179. yeah it did , and I learned a lot.
180. Yes it was, however, I felt as though I wasn't able to expand it as much as I could have because there were 600 students in the class and I don't always have time to go to office hours. By the time I get to office hours even, the interest is gone. But this chemistry course was definitely more challenging than high school in the sense that we really tried to understand chemistry more abstractly.
181. This class was intellectually stimulating because it was structured in a way that made us apply our knowledge instead of just memorizing things.
183. It did, I wish I was more interested in the subject matter so I could have put more effort into it.
184. Yes
186. Yes it was. It prompted me to study chemistry and to review notes daily because the concepts are also somewhat difficult for me to grasp.
187. Yes I really liked it and it made me realize how interesting chemistry was, which is something I didn't think in high school when I took the class

188. Yes, it was intellectually stimulating. There was a lot of material presented, but none of it was excessively complex. It absolutely stretched my thinking, teaching me to think more deeply about chemical concepts.
189. Very much so. Chemistry is now a part of my future passions and interests.
190. Yes, it broadened my thinking very much and made me apply my knowledge
191. yes the lectures were very engaging and thorough with great examples and time spent on each concept
192. Yes because most of the concepts I learned through this course I never learned before
193. It offered a deeper lens to view the world through, but it doesn't seem to be a problem solving tool in the way that, say, calculus is. This being said, it is fairly interesting. It did not "stretch" my thinking, but it did require a lot of mental legwork to decipher the seemingly overcomplicated language of the concepts.
194. It was intellectually stimulating because the concepts were challenging
195. Lectures were engaging and I was exposed to some rather new concepts early in the class such as the impacts of quantum physics on chemistry.
196. Fun entertaining class and teacher. Made chemistry interesting.
197. Yes there was a lot material to learn
198. No, i took this class in HS
199. This class was intellectually stimulating and it allowed me to connect topics that I learnt previously learnt while also learning new things.
200. Yes. It expanded on the basic chemistry concepts I had already known and I think that learning new content is stimulating
201. Yes, it expanded my current chemistry knowledge.
202. Yes, I was surprised by the amount of content and depth to which it was covered.
203. Yes, prof Craig is really nice.
204. I already knew most of this going in because of AP chemistry so not much was new.
205. This class forced me to realize that chemistry is not as black and white as it seemed in high school. Many of the "constants" are arbitrary. It made me realize that as much as we know, it's very difficult to describe microscopic events, even though they're what give us life.
206. Yes
207. Learning concepts and applying them in the labs made it really challenging but in a good way.
208. Yes the course was intellectually stimulating. Although I had taken Chemistry for two years before in high school the information presented was new and different than I had previously learned.
209. Yes, the labs were a new environment for me
210. no
211. Yes, I've learned a lot stuff in this course, and it really strengthens my confidence in chemistry.
212. Yes it was intellectually stimulating because the pace was very fast and we had a lot of material to cover in a little amount of time.
213. Yes, the material at times was difficult and I needed to 'stretch my thinking' to be able to apply it to exam questions.
214. yes it was. there were some concepts in the lectures that made me think about it and process how it worked.
215. Yes, the concepts presented in this course were intellectually stimulating and vary interesting to learn
216. It was a basic course in Chemistry without much innovation. It was alright.
217. Because it was very challenging
218. This class was my first chemistry course, so it stretched my thinking incredibly. I learned all new concepts and understood how to apply them with stoichiometry.
219. It was not hard enough. My biggest problem with the course is that there is no grade distribution. The top grades in the class are separated not by knowledge, but by not making silly mistakes on multiple choice tests.
220. Very challenging and intellectually stimulating class. The quizzes were difficult, I wish we could have had worksheets instead. Midterms were reasonable. Very much homework on ALEKS.
221. Yes.
222. This class is stimulating, especially I never study chemistry before.
223. I learned some new topics that I did not learn in AP Chemistry in high school thus the new topics were intellectually stimulating. This course went into more detail that stretched my thinking. There was some challenging exam questions and concepts.
224. Yes because you had to apply the concepts you learned before in order to understand the new concepts that are being taught
225. I took chemistry in high school, but this class brought a whole new level of understanding to the periodic table.
226. Required a pretty thorough understanding in order to succeed in class, especially on multiple choice exams, so yes it was intellectually stimulating
227. Yes! Concepts were mentally challenging but fun to learn
228. Yes, this class was very intellectually stimulating. It required a lot of work and attention.
229. It was stimulating because the concepts were taught in a manner where the student had to interact with the material to learn it.
230. I'm not the best at chemistry, but I think this course organized it in such a way that I got as much as I could out of a chemistry class.
231. Yes cuz it was hard
232. The class was intellectually stimulating as I learned material that I had little understanding of prior to this class, but Chem 142 allowed me to solidify my knowledge of the class' material.
233. Yes, topics were interesting and course content was challenging.

234. It was definitely somewhat similar to Honors Chemistry back in High School, but much more rigorous and the explanations felt more clear.
235. Yes
236. This class was intellectually stimulating, as I learned a lot of new stuff about chemistry.
237. Stupid science lady couldn't even make I more smarter...
239. Experiencing and going more in depth with chemistry concepts that I was only vaguely familiar with in high school.
240. Yes, because chemistry is the backbone to literally everything.
241. No, it was general chemistry.
242. This class was extremely challenging and stretched my brain to its limits.
243. Yes, it was quite challenging and made me think critically about conceptual topics, and my overall understanding of topics grew much at the end compared to the beginning.
244. Yes, I learned something new every class and had to think critically because the content was difficult.
245. No, just a lot of useless memorization.
246. This class did a good job of stretching my thinking as it presented a challenge to learn some difficult concepts at a fairly quick pace.
247. Not really, I had already learned much of the content in high school.
248. It stretched my thinking in the fact that you are examining specific chemistry at a macro and microscopic way which can be challenging. It was hard for me to grasp some of the key ideas which made it hard to learn other concepts.
249. This class is very intellectually stimulating, because it expect students to put in much work outside of class in order to succeed.
250. The class was very difficult which forced me to put a lot of effort into learning the material. It was not interesting in my opinion.

#### **What aspects of this class contributed most to your learning?**

1. The labs. Doing the material hands on was interesting and one of the only things which felt applicable.
2. Panopto video and lecture notes.
3. The critical thinking required
4. Labs
5. lectures, TA (Dylan)
6. The lectures really helped with getting a better understanding of the concepts.
7. Lectures and readings and quizzes.
9. Practicing and rereading lecture notes.
10. The examples in lecture contributed most to my learning.
11. Weekly worksheets/quizzes made me learn as the quarter progressed
12. The practice problems provided by the worksheets were incredibly beneficial in my success
13. The core concepts of the class.
14. The lectures.
15. midterm review. since the first midterm was so hard it made me study more
16. The quiz section, weekly worksheets, suggested EOCs, and lecture
17. I thought the lectures were the most helpful and the worksheets given before exams was also useful because it gave insight on what was going to be on the exams.
18. the ALEKS, lectures, and the weekly quizzes
19. The reading and office hours has helped me the most.
20. She was very thorough with her explanations.
21. ALEKS homework, weekly quizzes and review for those, and midterm reviews.
22. The professor's engaging speakinh and presentation of information
23. Most of my learning was through aleks doing all the complicated mathematics.
24. Lectures with videos and examples as well as the practice worksheets each week.
25. The instructor's clear explanations and helpful slides of notes.
26. Aleks and quizzes.
27. The questions that got answered and the examples you gave were very helpful in me understanding the content.
28. Aleks, and also the weekly worksheets.
29. Lab and lecture
30. lectures, ALEKS
31. The explanations and examples given by Dr. Craig!
32. Examples during lectures
33. Review questions



34. Dr. Craig's lectures were very engaging and interesting. They were organized and very easy to follow. Dr. Craig is very clear and welcomes questions. ALEKS homework was time consuming but was helpful in solidifying what was learned in class. The repetition was helpful in retaining the knowledge.
35. The online activities, Aleks, contributed most.
36. Lectures and quizzes during weekly quiz sections helped a lot, and ALEKS was quite useful.
37. Going to Lecture
38. Labs
39. Everything. Especially quizzes and ALEKS.
40. The class really didn't help me learn anything. It was all the work I put into it on my own that made the class worth something.
41. The class lectures. The slides presented made the difficult material easier to understand.
42. doing online ALEKS problems
43. Example problems
44. ALEKS homework and its repetition
45. The Aleks objectives helped clarify and give practice to topics I didn't understand in lecture.
46. The practice problems.
47. Professor's lectures really helped, preparing for exams and to learn the materials as well as the ALEKS, a little.
48. ALEKS contributed most to my learning and I feel like I benefited most from this program
49. Aleks helped me substantially in understanding concepts in this chemistry class.
50. Lecture
51. The book, and youtube.
52. The book.
53. lectures and Aleks
54. Quiz section preparation was a huge aspect
55. The way Dr. Craig thoughtfully answered each question was very valuable in terms of my understanding of the course material.
56. studied on my own most of the time
57. Lecture and ALEKS
58. Homework (Aleks) and lectures contributed most.
59. The lectures and ALEKS.
60. The homework (ALEKS) contributed most to my learning.
61. The prof did include a lot of visuals and illustrations which made difficult concepts much easier to grasp. She was very enthusiastic about the subject and organized the class very well and made it easy to follow the curriculum.
62. Lecture and the instructor-developed practice problems present in weekly worksheets.
64. The visuals in lecture slides were really helpful.
65. Watching own videos and self studying...
66. The worksheets and exam practices were definitely the most beneficial in terms of helping me understand the material, by clearly outline what future exams or quizzes would somewhat resemble and give me practice on how to complete each individual problem.
67. review and doing examples on the slides that are relevant to the exams
68. Aleks was an effective way to learn as well as the practice worksheets.
69. Having an enthusiastic professor with organized lectures
70. Lecture
71. Demonstrations and extended-metaphor explanations with lots of arm-waving. Otherwise it's just really abstract.
72. Quizzes and practice exams.
73. Lectures and textbook.
74. Going to lecture and doing the practice exam problems
75. The quizzes were helpful in preparing for the exams, and the worksheets were also good preparation for the quizzes and for understanding the material.
76. The explanations in lecture and the example problems given. BUT ALSO the explanation and applications of course material in ALEKS. Although sometimes tedious, ALEKS was very helpful in reinforcing content.
77. Her clarity in examples and in depth explanations that explained a subject past just an equation.
78. Lectures and quizzes during quiz section were most helpful.
79. labs
80. The quizzes we get back helped me work try to work faster and to see what kind of questions I should work harder on to understand.
81. I particularly enjoyed the real-life scenarios and in-class demonstrations. These instances are much easier to commit to memory when there was some level of student involvement. I also appreciated the weekly quizzes to keep us on our toes and regularly test our skills, despite the added workload.
82. Mostly learning more about myself and how to study better for tests and perform better on them.

83. Aleks homework for material understanding, lectures for formulas and stuff
84. I really enjoyed the use of videos and demos to further explain difficult concepts. I also thought the exams were extremely reasonable in terms of difficulty.
86. Doing practice problems, ALEKS, going to lecture, and actively reading the textbook contributed most to my learning.
87. ALEKS, as much of a pain as that website was, it was definitely the most helpful in learning.
88. Review worksheets and learning on my own
89. The lectures and the ALEKS assignments contributed the most to my learning.
90. The ALEKS online homework contributed most to my learning. The quiz sections also helped expand my knowledge on a weekly basis.
91. My notes.
92. Demonstrations contributed the most to my learning.
93. Professor Craig's enthusiasm.
94. The Aleks sessions contributed most to my learning because it was the most clear and step by step aspect of the class.
95. weekly worksheets, practice exams, in class examples, ALEKS
96. Online powerpoints.
97. The lecture slides were very insightful and contributed most to my learning.
98. office hours
99. Hiring a tutor.
100. Aleks, quizzes, and worksheets.
101. Everything
102. Lecturers enhanced the textbook material.
103. Reading the textbook contributed most to my learning.
105. The lectures by the professor, she is a wonderful teacher
106. Establish good learning habits
107. The lectures were very effective in highlighting the important parts of the course and covers everything on the midterms.
108. Likely lectures and readings.
110. Lectures
111. ALEKS
112. The lectures contributed the most to my learning.
113. Worksheets, Lectures, Quiz Sections, ALEKS
114. The homework program Aleks contributed the most.
115. Doing the question review
116. I liked ALKES even though it was very time consuming.
117. Lectures and ALEKS homework contributed the most.
118. Lectures
119. The lectures and Alek.
120. Lectures/examples given by Craig
122. ALEKS
123. i think that the lectures were the most informative as well as the notes that were put up. i didn't really enjoy the way the information is presented in the textbook
124. The lectures, reviewing key points.
125. The numerous examples used in lecture.
126. I found the lectures to be very helpful and interesting.
127. I'm actually not quite sure. Lectures were helpful because of all of the examples and explanations but if I really had to choose, i'd say maybe Aleks because of the amount that we had to do.
128. Having a good lecture note provided for a student
129. The labs
130. Professor Craig!! We love her!
131. the Labs.
132. I think this class taught me how to take specific aspects that were learned in class and apply it to the work that's done on homework and quizzes.
133. logical thinking.
134. The powerpoints get the concepts across really clearly
135. ALEKS. Constant learning with objectives and repetition helped me learn.
136. Dr. Craig's lectures were very effective in teaching the content of the course.
137. ALEKS was not the most helpful source of learning. The review worksheets the professor provided were a lot more useful than ALEKS to prepare for the test. Also, the problems in the textbook were useful.

138. Aleks
139. The constant need to keep up with the class, because of the weekly quizzes.
140. Quizzes and labs.
142. The homework.
143. The lectures greatly contributed to my learning.
145. lecture
146. The usage of diagrams.
147. Being able to use stoichiometry and use equations like Boyle's law, etc.
148. Professor's very good explanations
149. N/A
150. Lectures, quiz sections
151. The Aleks module probably contributed the most to my success.
152. The review worksheets
153. Lectures, plus taking and reviewing notes from lectures.
154. Practical aspects like the lab sessions, and also the lectures.
155. ALEKS really helped with my understanding of topics, as well as the weekly review worksheets, and reviewing the midterms after I had taken them.
156. Lecture, aleks, book notes
157. The quiz section was very helpful, however, I wish we were able to learn more of the material proficiently in class so that it wasn't just the quiz section bringing most of my learning.
158. I think the ability to time manage my studying was the thing that I got most out of this class.
159. The weekly quizzes were a great way for me to study for the exam. Because I had to study every week for the quiz, it prevented me from procrastinating before the mid terms and final exams.
161. Visuals and step by step explanations while also explaining why the steps are there and what they mean.
162. aleks
163. The labs were most helpful, since they contained the sort of problems one would see on a test or quiz, but allowed one the ability to ask for help during it.
164. Completing the ALEKS assignments was integral to my understanding of course material. Doing problems in ALEKS proved to be very important to my success in class.
165. Examples in lecture, reading the textbook.
166. my TA
167. aleks and lectures.
168. ALEKS
169. The professor's lectures and ALEKS assignments contributed most to my learning.
170. Visual examples, worksheets, practice tests.
171. The ALEKS objectives and weekly quizzes.
172. The aspect of this class that contributed most to my learning would have to be the Aleks online learning program. This program works well in making sure that you truly learn the topics at hand. Additionally, the weekly quizzes helped enforce what I learned in Aleks, as well as what was taught in the classroom.
173. The professor's teaching was very effective and the collaborative parts of the quiz section were helpful.
174. Panopto and lectures and quizzes
175. Lecture
176. Quiz sections as well as review worksheets greatly helped me to test my learning. Lectures helped me to better understand confusing topics.
177. Professor Craig's weekly quizzes
179. Going to lecture and lab.
180. Lab and weekly worksheets
181. The worksheet problems and ALEKS problems contributed most.
183. Examples and audience interaction kept me much more engaged in lecture
184. Class time, ALEKS
186. The lectures, it's helpful when Dr. Craig explains concepts even further and answers student questions.
187. The lectures were always informative and made the information learned in the readings more clear and easy to understand. The quizzes were also good because they forced me to review the material I'd learned continuously.
188. The quizzes, ALEKS, and the lectures were most useful to my learning.
189. A lot of personal studying and youtube videos.
190. ALEKS
191. the examples used in class that were outside the textbook, such as youtube videos and demonstrations were very helpful in me understanding concepts

192. The worksheets and in class problem examples
193. Panopto, course supplements like weekly review sheets and unit summaries on Canvas, ALEKS
194. Instructor's explanations were clear and concise
195. The visuals and illustrations during lecture really helped me to understand concepts and to understand events on the molecular level.
196. The clear oriented lectures.
197. Her examples on problems
198. Labs/ Quiz Sections /ALEKS
199. Craig was extremely passionate about chemistry and she was clear in her lectures and her expectations for the course.
200. Aleks, Lecture examples, and exam practice questions
201. ALEKS, lecture
202. I loved Craig's teaching style
203. Professor
204. The class lecture notes were most helpful.
205. Lecture and doing practice problems.
206. Working through labs helped me retain the most information
207. Being able to freely ask questions as well as instructor being clear to what is being taught.
208. The Aleks really helped me and forced me to practice concepts until I got it right. The quizzes and especially the group portion of the quizzes were very helpful for immediate feedback.
209. The lectures and slides
210. Aleks
211. Aleks is a really helpful website for me to study.
212. I think the end of chapter questions helped me learn the most. They were the most challenging and as a result, helped me on the quizzes and tests.
213. Professor Craig's lectures and Aleks.
214. the online homework, aleks.
215. The professors enthusiasm and the online learning tool aleks
216. Panopto Recordings. Dear God, please have every class be recorded. That's so incredibly useful to have everything online and in a hall of 600 people it's not like you get any extra benefit from being in the room. Heck, it hurts you to be there when you've got the recording to watch.
217. The homework
218. Lectures and weekly review worksheets.
219. Worksheets.
220. The ALEKS and textbook readings.
221. Quiz section, quizzes, weekly worksheets
222. The introduction of general chemistry. The Aleks pie progress forced me to practice questions each day throughout the week.
223. Lectures was very helpful in introducing and explaining concepts. In addition, I think the worksheets were really effective. ALEKS was really annoying but overall it did help me practice problems and did teach me new concepts or help with clarifying concepts.
224. The PowerPoints of this class as well as the weekly quizzes and review worksheet
225. The lectures, and how connected they are to the textbook.
226. Lots of opportunities to practice with worksheets, eoc problems, practice exams, etc.
227. Attending lecture, aleks, quiz section
228. Lectures
229. The aleks was very helpful in learning the content
230. Going to lecture
231. Aleks
232. Dr. Craig's enthusiasm during lecture was engaging, making me more interested in the difficult material presented.
233. Examples provided during lecture to get a better perspective.
234. Labs.
235. The lectures and quizzes
236. Quizzes, Lectures
237. All right, later dudes. S you in your A's, don't wear a C, and J all over your B's.
238. example problems, demonstrations
239. What contributed the most to my learning was probably studying outside of class in order to fully understand concepts.
240. It was a good introduction into how hard classes here are.
241. the Aleks and lectures.
242. I believe Craig's ability to present information greatly increased my knowledge base.

243. Lectures, and textbook problems, the problems made me gain a true understanding of problems rather than just memorizing certain processes. I understand why they are used, how, and when.
244. Labs were a good way of understanding concepts and lectures were helpful.
245. As much as I hate to say it, ALEKS helped me a lot with learning the content.
246. Craig's teaching ability as she did a great job of explaining the concepts and helping the students understand material.
247. Lecture and quizzes.
248. Going to lecture and drilling information over and over again until you understand what is going on.
249. The lecture sections - adding to the slides - contributed most to my learning.
250. The labs helped apply my knowledge into a visual image and aleks was an effective way of learning.

#### What aspects of this class detracted from your learning?

1. The online homework, aleks. It felt like a waste of time from the beginning as its inefficiencies as an online system frustrate me and made it take much longer to complete. Added to that is the fact that I had to pay extra for it when it didn't add to my knowledge and wasted my time.
3. The largeness of the lecture sizes
4. Aleks
5. Labs (Purpose of them), competitive atmosphere
6. My phone, random noises, and lack of sleep.
7. Some labs seem irrelevant to what we're learning in class.
9. Lectures were a bit hard to pay attention to because of how early it was.
10. The weekly quizzes detracted most from my learning because I felt like they hurt more than they helped. Despite the quizzes being designed to help the students keep up with the material they were always stressful to prepare for and usually had me dropping everything else important to prepare for the quizzes themselves. I felt like the discussion sections would be more useful if we actually just went over the topics in class one more time and go over practice problems rather than to a quiz each week.
11. Group quizzes were not helpful
12. Lectures didn't feel as useful as one would think unfortunately but that varies from student to student.
13. Some of the complex ideas that are reviewed were too complicated for me to understand.
15. TA. My Ta did not help me when I asked questions during office hours and would respond with a question while I would look around and other TAs would gladly help their student which was frustrating professor would teach very basic in class and then test us on super super hard concepts and got mad when we did not know how to do it
16. pace of lecture; sometimes I found myself talking with my friend when course content became too much of a review/boring
17. ALEKS takes too much time to complete.
18. the sheer amount of ALEKS
20. None.
21. The enormous class size.
22. None
23. At the same time as learning aleks was a lot more advanced than needed for the course and took valuable time from studying.
24. Nothing
26. Professor not explaining all concepts in lecture.
27. None.
28. The early morning lecture, I was always kind of tired so not nearly as focused as I could have been.
29. none
30. none
33. Lectures
35. Not being able to stay awake in lecture detracted most from my learning.
36. Sometimes I felt unfocused during lectures, or too stressed each week because of quizzes.
37. Unnecessary ALEKS topics that were not covered on tests
38. Weekly quizzes
39. Nothing.
40. The amount of people in the lecture and how in our quiz section all we did was take quizzes.
41. Nothing
42. none
44. Inability to finish some lectures
45. The size of the class was the biggest factor. It was a big change from high school where I could ask the teacher or a classmate immediately during lecture if I needed more help. Also the pace of the class, this much material packed into one quarter was much faster paced than high school courses.
46. Maybe the labs but overall everything was effective.
47. Fact that there were too many people in the class made it harder to focus and also sort of intimidating.

48. The lectures were not very interesting and detracted from my learning.
49. Quiz sections didn't help me as much as I thought it would. Other approaches such as worksheets or work time would've been much more helpful.
50. Quizzes being worth 10% creates more stress. I wish we could have done a worksheet during quiz section time instead of actually taking quizzes that were challenging to do well on.
51. Aleks and little to no explanation of basics and meaning.
52. Aleks.
53. Sometimes Aleks made it hard to focus on the actually material presented in class.
54. Lab had a little time crunch and hence smaller labs would I believe help more in learning
55. I don't think anything detracted from my learning.
56. the lab
57. Labs
58. The overall difficulty of the material detracted from my learning.
59. Maybe ALEKS? I felt like some material I had to learn entirely separate of what we were learning in lecture to finish objectives.
61. Sometimes I felt as if the prof wasn't explaining the concept in the easiest way they could explain it, and like she was complicating things unnecessarily. This made it difficult for me to grasp certain concepts during lecture.
62. ALEKS and the end-of-chapter problems. I found that ALEKS didn't align with our lecture material and sometimes presented various ways to solve a problem. Although alternate solutions can be useful, they can also be very confusing if students aren't comfortable with the first method of problem solving.
63. Slow development
64. Nothing
65. The course's difficulty of getting a good grade.
66. The labs were a significant waste of time and were negligible in terms of helping me understand the course material. If anything, they distracted from the content that was being distributed to the class, and made studying for actually material on future quizzes or exams harder due to their significant time requirement.
67. some examples on slide werent on the overall powerpoint
68. Early lectures
69. Difficulty understanding online homework and not knowing what will be on the exams
70. Lab
71. ALEKS is really frustrating to work with. Not only is the material badly matched to what we're learning in class, the interface is impossible.
72. Aleks.
73. Nothing.
74. My TA was not very helpful in regards to answering questions and sometimes the lectures were rushed
75. The labs were difficult to understand and the mechanisms of Aleks could be incredibly frustrating when one lost points for seemingly insignificant reasons.
76. Okay so it was awesome to have all those resources you provided us through the year, but sometimes the quantity was almost overwhelming and contributed to confusion on where I should start to further my comprehension. DONT GET ME WRONG, its fabulous to have all the resources you provided. Don't get rid of them!! But to answer this question, I often found it difficult to find a starting point with all the options out there.
77. NA
78. N/A
79. information in readings assigned in the book was not covered in the class sometimes
80. I feel like sometimes class moves by so fast, but its understandable with the short amount of time we have.
81. This course is time-consuming. While the material presented was interesting and clear, there was little time in class or in discussion working with the material. Most of that occurred outside of class individually.
82. LABS
83. labs just stress me out and i dont feel like i learned anything in lab
84. I felt like we did not get through a lot during class. I realize some topics cannot be explained quickly, however the lectures were sometimes a bit slow.
86. I found it kind of frustrating and disappointing to find that I would lose five whole points for each question on the quizzes or midterms for mere miscalculations because, with multiple choice in a course that requires a lot of calculations, it made it difficult to actually demonstrate that we do understand the processes we have to go through in order to get to the correct answer.
87. Lectures often took a long time to explain a basic concept. I felt like I was wasting my time occasionally.
88. off topic in lectures
89. Nothing really detracted from my learning
90. I think the long lab sections detracted me from my learning. Also sometimes the irrelevant content in the lectures took away some time from my learning in the course.
91. Quizzes maybe.
92. Nothing detracted from my learning.

93. How behind schedule Professor Craig was. Whenever she could not finish a lecture she would post a video online, but watching videos are not the same as attending a lecture.
94. Quiz section. The quizzes seemed unnecessary and quiz section is better to be used for review of the weekly material and/or the midterm/final.
96. None
97. The professor tends to get off topic sometimes during lectures and that detracted from my learning.
98. aleks
99. The fact that the professor does not care about what her students learn rather, proving her intelligence and making all aspects of this class harder and more stressful than it needed to be is a higher priority. Student mental health is not on her radar at all seeing as when I had a home invasion and could not make it to a quiz section (I had multiple police reports) she just said there is nothing I could do to make up the quiz that was taken and ignored later e-mails where I voiced how distraught I was. It is interesting that UW has so many issues with student mental health and professors are not encouraged to do what they can to help the students who are paying their bills.
100. The exams stressed me out too much and made me stress about the class overall.
101. The test format
102. Test questions seemed like trick questions.
103. Nothing. Everything helped.
104. unnecessarily harsh grading system by TA resulting in a significantly lower average class grade compared to all other sections
105. No aspects detracted from my learning, just wish that alek format was different
107. The time constraints, since we sometimes runoutof time for some concepts.
108. Not enough lecture hours.
109. Anytime that i could not make it to lecture the concepts were extremely hard to comprehend from the textbook and even panopto
110. Aleks
111. N/A
112. The labs and quiz sections of this class detracted from my learning.
113. None
114. None, it all contributed.
115. A lot of aleks homeworks that is not important to our class
116. The amount of time ALEKS took was distracting, but I liked that it taught me concepts if I didn't understand them.
117. Take home Labs
119. None.
122. quizzes/not using that time to go over concepts
123. I feel like the section quizzes were not positively contributing to my learning
124. None
125. Nothing in particular.
126. I feel as though the labs did not typically help me understand topics better and felt more like somewhat unrelated work.
127. I would say the exams distracted me the most. I know that it might sound odd but the exams force students to cram information in little amounts of time and since we're so focused on that, much of that information doesn't stick. (That's how it is for me at least.)
128. None.
129. The quizzes
130. Probably the amount of time we are given to complete tests and quizzes. I don't understand why we only get about 2 minutes per question. Will that help us succeed in any way?
131. aleks
132. Other students in the class would talk while the professor was talking.
133. scientific figures.
134. We didn't always finish the presentations on time during class, but it wasn't too bad because the panoptos were online
135. Quizzes. They added too much stress
136. The Aleks homework website felt like it spent too much time on insignificant topics while not spending nearly enough time on important topics.
137. No aspects of the class detracted from my learning.
138. quizzes in quiz section
139. Aleks. Doesn't help me learn the material, and wastes a good chunk of time
140. Nothing.
142. The Alecks program.
143. The lack of examples of certain types of problems detracted from my teaching.
145. TA wasn't helpful
146. Less focus on hard concepts on more on basics.
147. Having to do a lot of aleks, labs that didn't really have anything to do with the course.

148. Having to balance between other classes, the fact that I came in not knowing much chemistry
149. N/A
150. Sometimes ALEKS did not exactly match up with the lecture material
151. The quiz sections were stressful.
152. The pace of the class with mediocre explanations, limited communication via email
153. The amount of students in the class.
154. Quizzes in quiz sections.
155. None
156. The fast pace.
157. I wasn't a fan of the lectures because they were all read off a powerpoint and didn't help that more difficult concepts were brushed over.
158. Students on their computers and chatting during class made it hard to focus. And the light on the side wall in Kane 130 kept flickering all quarter.
159. None.
161. The overwhelming discouragement and lack of care of student success.
162. labs
163. The pressure of getting ALEKS problems right. The weekly total for chem problems varied wildly week to week because of it, with some weeks requiring ten hours to finish ALEKS problems alone, let alone work on the textbook or review problems, and other weeks taking no more than an hour or so. The variation was deeply stressful.
164. Labs contributed little to my understanding of the core concepts and often felt harder than they needed to be.
165. None.
166. how challenging it was
167. quizzes were discouraging.
168. stressing about quiz grades
169. The EOC problems from the book detracted from my learning.
171. The take home labs.
172. Aspects of this class that detracted from my learning was also Aleks, for the program is rather picky with some of its answers, and occasionally did not accept correct answers and is not forgiving at all.
173. The class size detracted from my learning.
174. Nothing
175. Tests being harder than any practice material
176. Sometimes labs, but they were mostly helpful.
177. Homework assignment- aleks
179. taking test .
180. As mentioned before, the fact that the class was so huge and I wasn't able to talk to the teacher in class.
181. The amount of ALEKS problems we had to do could be overwhelming at times.
183. Nothing really
184. None
185. The lecture size. Too many people we're talking
186. The labs because they did not provide any further knowledge about each topic. They just took up additional time and energy when the effort could have been spent more productively.
187. Sometimes the Aleks would just have to do with information we would learn on friday which forced me to learn it from the aleks explanations which was harder and not as useful.
188. The labs were detrimental to my learning. They are excessively high-pressure and stressful, in contrast to the amount of information they presented.
189. Being tired and sleeping through lectures.
190. none
191. none that I can think of, everything had a purpose
192. Long lectures by just reading from the slide
193. Dr. Craig strives for the most precise language possible in her explanations of chemistry - while she achieves this, it often feels verbose. I think this might just be catering to the demands of chemistry and its lexicon, however, very simple concepts seemed to be overcomplicated quite regularly. She sometimes summarizes concepts in a more concise manner after explaining it - I think this should be expounded upon in that linguistic resolution before or after zooming in deeply on the matter. The accessibility of Panopto.
194. Going through the problems during lecture were kind of rushed so it was difficult to follow along
196. Aleks sometimes gets me mad and confused.
197. Nothing
198. was too early in the day
199. Nothing.



200. Labs
202. Huge class sizes
203. Too much Aleks to do each week
204. Professor Craig wasting time during lectures on things not necessarily important to the test.
205. people whispering next to me in lecture
206. Lectures were too large, so I stopped going
207. The amount of ALEKS that was due in the beginning and last few weeks of the quarter.
208. None.
210. the weekly quiz
212. Sometimes we fell behind which made it a bit stressful. Also I think quizzes the week after exams was hard to do.
213. Nothing really.
214. the people around me
215. My useless TA
216. ALEKS. I hate it so much. Burning passion against it.
217. Some boring lectures
218. The lecture size, but it only affected my learning slightly.
219. Multiple choice tests.
220. The quizzes that had nothing to with the homework and the concepts in the labs that we did not learn in lecture. There were sometimes concepts that would only be on the labs and nothing else.
221. Readings
223. ALEKS distracted me sometime because the topics in ALEKS did not match with the lectures. The labs also did not match with the topics of the weeks sometimes.
224. Not much
225. The rage that ALEKS gives me knows no bounds. Hell hath no fury like it.
227. n/a
228. Some of the labs felt not necessarily important in learning the content
229. Having it early in the morning.
230. stress over tests and Aleks
231. Aleks
232. The TA didn't quite seem to be very well-versed on the material - preventing me, and other students, from getting as much out of the help we needed to understand the material we didn't understand.
233. Way too much work assigned. Normal course load would be the lab and quiz section requirements with some homework problems. ALEKS was way too time consuming and did not help much when it came to tests or quizzes.
234. ALEKS.
235. High stress labs
236. ALEKS. It was sometimes more frustrating than it was helpful.
237. bitch ass aleks.
239. Going over examples that were much easier than the actual content used in tests and quizzes.
240. Lectures were boring a lot of the time.
241. The tests were about strategy, not content.
242. The labs were overly stressful and time consuming.
243. Evaluations made me feel somewhat defeated, I felt exams were more trying to trick me than test my true understanding of a topic.
244. Nothing.
245. Lectures a little dull. It's not because of the instructor, but rather the content.
246. Nothing detracted
247. Na
248. Trying to keep up with labs, ALEKS, and the course content that will show up in the test. It makes it difficult to know what information is important and what isn't.
249. The quiz sections and tests, especially the timed portions, caused much anxiety and overthinking and made me perform worse than my actual potential.
250. The examples used in the lectures had a tendency to be way easier than the material in the book.

#### **What suggestions do you have for improving the class?**

1. Get rid of ALEKS or reduce the amount of time needed on ALEKS/the number of objectives. Give more credit to kids in IB schools so they don't have to waste their time in this class.

3. Making the class size smaller
4. Have Aleks due on Saturday!
5. Maybe, explain how this lab is suppose to enhance our learning
6. The class is already pretty well off
7. Perhaps, making the labs seem more relevant to what we're learning. Sometimes, the purpose of each step of the lab seems unclear.
8. No quizzes
9. Provide more practice for tests and quizzes.
10. I feel like dropping the weekly quizzes would improve the class and instead devote each discussion section to reviewing the concepts in greater detail would help out students. Most students I see usually dread coming to the discussion section and I feel like having a quiz each week puts unnecessary stress on students. Discussion section should be used to help people better understand the material and I feel that weekly quizzes aren't helping that much. For me personally, they were always stressful and even if it did force me to keep up with the material, I feel like I would understand and learn more from the course if we just had more time to go over concepts in section to get a deeper understanding of the material and help students get caught up.
11. Do not have group quizzes. Individuals should be evaluated based on their own knowledge, not the knowledge of other group members
12. Adding more variety of practice problems for students to practice on.
13. Use more simplistic language
15. get rid of weekly quizzes they are not helpful and are very hard teach the harder concepts that we will be tested on have TA explain and teach us stuff we do not understand in quiz section rather than having us take a quiz and leave It would be nice if the professor did not get mad at us if we did not understand something when we would ask her questions in class and during office hours. have TAs that are equal and willing to help their students
16. Not much; the quizzes, worksheets, and EOCs effectively prepare students for the exams. If students put in the time, they should do well in the class. Her lectures are clear and straightforward. The only thing is that if the course is not intellectually stimulating enough, potentially take the accelerated chem track.
17. Reduce the amount of topics or amount of work needed to be done in ALEKS.
18. none
19. I wish the quizzes were not graded because then I am not afraid to actually see what I do or do not know and many people would still study for the quizzes anyways.
20. None.
21. Possibly only two lecture days with two quiz sections. One for taking the weekly quiz and one to review for material.
22. None. The class was perfect
23. A little less examples in class because I feel like a lot of things were self explanatory.
24. Nothing
25. The instructor was a bit behind on a few lectures, so more organization.
26. Cover more quiz and exam information in lecture.
27. None.
29. Very well done.
30. none
33. Better pre exam preparation
34. Exams were very stressful. The time constraint made it so that my knowledge was not well represented by my test scores.
35. Making quiz sections more review and worksheets and working out problems instead of just testing what I learned would improve the class.
36. Maybe putting out more exam reviews or focusing on the diagrams and graphs covered in lecture more
37. None
38. Get rid of quizzes in favor of group work sessions
39. More time to do ALEKS.
40. I wish the quiz sections were used for getting clarification on subjects introduced in lecture from our TA instead of just taking quizzes on topics we don't really understand the fundamentals of.
41. Better study material for quizzes
42. more of a connection between what learned on ALEKS and in class
44. Less stress at the beginning
45. If possible provide more in depth solutions to the EOC problems. Sometimes the book was lacking in explaining how to do some of these problems.
46. Nothing
47. Maybe going over some parts of lecture during quiz sections would be a greater help than to just have quizzes.
48. Make lectures more engaging.
49. Clearer explanations for math problems.
50. Missing a pre-lab quiz detracting 15 points from your overall lab grade seems like a lot when its counted as N/A for getting 100% on it.
51. Go over the reason and the purpose behind why something is what it is or is doing what it's doing, or at least emphasize it a little more.
52. More practice problems that are actually similar to the quiz questions.
53. I would suggest longer time to take tests and quizzes.

55. In terms of a general chemistry course, I don't think this class can be improved upon.
56. none, this is a lost cause
57. Make labs less repetitive of the same content and problems already used on ALEKS or in quizzes to further our learning and more interesting such as the lab where we did flame tests
58. More practice worksheets and explanations.
59. Line ALEKS up with lectures along with maybe extending time for exams and quizzes by a little bit.
61. I think we cover so many topics in such a short amount of time, and we are tested on so many subjects that we have not yet completely learned. It would be helpful if we had alternative discussions regarding certain topics in our discussion sections.
62. Replace quiz sections with recitations where students can ask questions and get help with confusing problems. Replace ALEKS with more instructor-developed practice problems with answer keys that align with the problem-solving methods we learned in lecture. Curve the exams; a 2.7 average doesn't help anyone and significantly hurts students whose goal is to apply to graduate school.
63. Harder concepts
64. None
65. More time in lecture to go over applied conceptual problems.
66. Include more worksheets and practice exams that actually resemble the exams and quizzes. Some of the questions on exams were rarely discussed and talked about.
67. make exams more relevant
69. Specify material that will be on exams and outside of class help
70. I think it was good as is
71. Stop subjecting us to the awfulness of ALEKS. Please.
72. It feels too much like a weed out class.
73. None.
74. Better time planning of lectures and more example problems in notes or to do on the side besides the ones from the book because they do not always correlate the best.
75. More assistance explaining concepts and the "why" of labs.
76. Nope!! Keep doing what you're doing! The system seems to work really well!!
77. NA
78. Longer and more comprehensive exams would be more accurate assessments of knowledge and mastery of the course. The current 20 question midterms and relatively short final are too short in my opinion to be an accurate measurement of how a student is doing.
80. highlight very important details, sometimes when we go through the slides there are some information we dont need to know.
81. Further explanation of the labs and our reason for completing in lab--they seemed to be added after the thought rather than integrated into class material.
82. Less questions on tests or non-multiple choice tests for partial credit
83. make homework problems less impossible
84. Just quickening the pace!
85. Way too much homework (ALEKS). Labs were confusing. Weekly quizzes were stressful. Should drop more than one quiz.
86. More practice problems before exams.
87. Making lectures more productive by having learning catalytics questions or doing more example problems instead of focusing on the full backstory and beginning of each topic.
88. Lectures need more focus on whats going to be on the exams
89. I suggest to push back the ALEKS assignment due date a few days back because oftentimes what is covered in lecture on the same day as the due date is on the ALEKS and many people do their ALEKS assignment before that lecture.
90. One suggestion is to have a shorter or less frequent labs because i learned way more from quizzes and lectures than in lab.
91. more practice problems
92. I do not have any suggestions.
93. Keep doing you Professor Craig.
94. No quizzes. We were informed that this year was the first year quizzes were incorporated and in all honesty all they do is stress out students more. Professor Craig is an excellent teacher and her class is excellent in all other regards.
96. None
97. The class is good and one suggestion I make will be for Professor Craig to use time more efficiently during lectures.
98. none
99. Encourage professors to care less about their own intelligence and showing that off to a class, and encourage them to focus on their students as a whole and thrive off of their dedication to learning versus discouraging them to want to move on.
100. Dedicating more time to exam review.
101. Use frq instead of mc so the students knows exactly what they don't know.
102. I suggest giving more preparation material for midterms. Give text exam questions that aren't so astray from the things we learned.
103. Nothing. It's great.

105. None, fantastic teacher
106. Since this is a big classes, I want to hear more learning experience from my colleagues. For example, how those students who get high scores studied for the exam?
107. Better handwriting.
108. Avoid putting exceeded time lectures on canvas.
110. None
111. More resources
112. Use quiz sections to practice problems and for question answering sessions, and weight the exams more heavily in order to compensate.
113. Going over more material in lecture so that we don't have to watch the videos at home
114. None
115. Give more aleks problem that is usefull in our class
116. Assign less ALEKS per week/ balance out the ALEKS objectives (sometimes we had 25 topics to do one week and then we had 9 to do the next week).
117. Please hold more general review sessions and have more practice problems. Would it be possible to have an past exam database with solutions available to students?
119. none thought the class was good!
120. My only complaint with this course/instructor is wording of questions on quizzes and exams. It was not uncommon that I missed questions not because I didn't understand the material, but rather it was difficult to decipher what the question was asking for (trick questions, basically).
121. Dr.Craig needs to condense her powerpoints. It is very often that she needs to send videos of the ends of lectures for us to watch outside of class, and she often needs to rush through powerpoints and our learning is hindered.
122. free respomse tests!
123. I feel like the section quizzes were not positively contributing to my learning, because say if i didn't get a particular question and then my group mates also didn't understand it, we end up arguing and it wastes time, even if we ask our TA, they only "suggest" a direction to go in, and a lot of times we don't end up understanding what the answer is or the logic behind the answer, its more focused on getting a answer and so i believe that i we can solve it our ta should show us how to do it because it just wastes time. it more hepful that way and at the end of the day we underdtsnad what we are doing. I also feel there should be more practice available online and not only one practice exam
124. More practice problems
125. More in class demos. Very much enjoyed those.
126. I would find it more helpful if the labs focused more on illustrating a difficult topic rather than acting as a long process that I go through each week.
127. I think the tests should be revised to be either less questions or somehow revised so that students have time to actually be able to breathe during the exam because it is an extreme time crunch.
128. It would be better if we have much more exam style practice problems provided for us
129. - Less quizzes - Detailed notes on the actual powerpoint
130. Less problems on the midterms
131. make aleks more efficient and in line which the concepts we are learning in class
132. Provide grade book in Canvas instead of Catalyst so we can see the overall percentage we have in the class in relation to our GPA.
133. was overall a great class, will take prof craig again next quarter :)
135. More practice worksheets and in-class discussion
136. Changing the homework system from Aleks or at least improving Aleks.
137. On the exams, there are some trick questions that don't really help in testing knowledge of a subject but instead just how well and fast you can take a test.
138. posting more midterm and final practices
139. Either removing Aleks or at least making the objectives shorter
140. Nothing.
142. Nothing
143. I think Dr. Craig should supply her students with more worked through examples. I found it difficult to answer some questions on her quizzes when she only showed how to solve it once.
144. No quizzes they are not helpful
145. generalizing how TA's grade the labs
146. Focus on the most difficult topics more.
147. The test and quizzes are very hard - it does not test the raw knowledge of students. Often times it seems like there are a lot of questions meant to trick students - something that may happen too often especially in such a limited time limit given.
148. ALEKS topics were due Friday, but sometimes the topics I had completed were not covered in class-- either barely or towards the end of the week. Because the topics were covered in lecture later, I had to teach myself ALEKS topics before and that was so difficult. Less ALEKS problems in exchange for other practice sheets (we already had book problems, it was hard to keep up with both... but maybe that's just for a struggling student like me)
149. N/A
150. None

151. I would suggest making the class examples more difficult and complex.
152. More review worksheets, More time for the individual portion of the quizzes
153. Smaller classes.
154. Class is amazing. Would rather have worksheets rather than quizzes.
155. None
156. The homework load was not manageable for me, but I understand that doing all that homework contributed to succeeding... it's an ok balance...
157. I think we need more time to just discuss material more and be able to have everyone comprehend it.
158. Having ALEKS do most of the teaching felt odd, not sure how to make this more effective.
159. None.
161. This class is way too hard and ultimately just discourages students, after taking this course I am not going to pursue my major and have a bitter taste in my mouth after this course. This class needs to be more fun and easier to grasp for student success. It seems like there is not much care as to whether a student is struggling so I hope that changes.
162. more relevant labs
163. I'm not sure if the instructor has any control over this, but ensuring the ALEKS workload is more consistent week to week would be good.
164. Don't make 'Atomic Emission' the first lab experiment.
165. None.
166. more study guides and practice tests for tests and I didn't feel the questions asked on the exams covered what we learned in class
167. Work sheets of previous years sound much more helpful instead of quizzes, I rather be able to get my TAs help rather than be forced to study on my own for upcoming quizzes.
168. have more practice tests/quizzes available similar to actual tests
169. Giving students more time to do midterms and exams so that we aren't assessed based on our speed, but on our actual capacity of knowledge.
171. Having less take home labs and making the grading more fair.
172. I enjoyed the humor that the professor included in the class, and made taking this early class more enjoyable. Overall, I cannot think of a way to improve this class.
173. I do not have any suggestions.
174. Nothing, She tried her best to help us learn, I'm really grateful for her
175. Give practice material that is actually useful in preparing for exams. Practice material way too easy in comparison to the exams
176. More time per question on quizzes and tests.
177. More practice quizzes
179. studying a lot and trying to understand the concept.
180. MAKE THE CLASS SIZES SMALLER/HIRE MORE PROFESSORS. Also just a suggestion in general, create a course where the students are challenged like Chem 142 but are not taking it to get into engineering or health sciences. I really like chemistry but feel like I can't continue because the environment is so competitive.
181. Making lectures more structured.
182. Teach materials ahead of Alex homework objectives.
183. Engage the students more with maybe more demonstrations or questions
184. Sometimes material was taught or learned after it was tested. Just some organization mistakes
186. Require less labs.
187. None really:)
188. Nothing, quite good.
189. Have more than two midterms.....
190. none
191. perhaps helping students create a study group of some sort, whether that be an online announcement or connection method
192. Include more example problems in lectures, give more problems in worksheets, and make the test and worksheet difficult the same. At times the worksheet would be really easy but the test would not reflect the worksheet at all
193. Clickers to encourage attendance to lectures
195. A lowering of the grade percentage that ALEKS contributes (maybe from 10% down to 5%) to reduce punishment for students using other study methods primarily would be nice. This would still encourage the work to be done but allow more wiggle room in study time use.
196. It's a great class.
197. Less ALEKS
198. none
199. Nothing really - perhaps more practice problems?
200. No suggestions
202. None
203. The exam question has quite big difference with the revision materials and much trickier. Need to match in order to make it fair.
204. Teach more in quiz section, this quarter I learned nothing in quiz section.

205. I understand why we need to learn about gases, but that chapter feels thrown into the middle of the end of the quarter. There are so many new concepts that have to be discussed in lecture that we don't go over many examples and it leaves us sort of on our own to try to figure out the practice problems. For example, we never even discussed density in lecture and then it was included in some practice problems so I had to do outside research and seek extra help. If there is a way to format the course so gases aren't so rushed, I think that would be helpful.
207. Explain certain concepts in quiz sections as well.
208. None.
209. Information is a little dense, it felt like we had to rush to get through some units
210. allow more time for the tests and quizzes.
211. No
212. Nothing.
213. Maybe making Aleks due on Sundays instead of Fridays.
214. no quizzes.
215. New TA's
216. Get rid of ALEKS. It's terrible. I know it probably seems like a good idea but it makes learning material painful and unfun. I like Chemistry. I really like science. I did not enjoy this class. That's for several reasons: starting college, inexperience, getting really sick a few weeks in, a heavy courseload of weedout classes, and no AP experience in Chem. But ALEKS is the single greatest detractor from my experience in this class.
217. More demos
218. Make the grading system less aggressive, and curve each quiz/lab class section separately from one another. I had a TA who graded very harshly, while others had TA's that did not. Something that was out of my control brought down my grade compared to others who I believe I outperformed. It seems really unfair.
219. Get rid of multiple choice tests or make the content significantly harder so the students at the top of the curve are not distinguished by who are the best test takers.
220. Have the TAs do more example questions. Make the quizzes easier because I thought they were not contributing to my learning and they were very difficult.
221. Less readings
223. More interactive activities. PollEverywhere? Kahoot?
224. Giving more worksheets to let students practice concepts
225. I really wanged the first lab because I had no idea how canvas worked or what I would need it for. A few extra minutes on it at the very start of the quarter could've cleared up a lot of the confusion/ignorance.
226. Having worksheet resemble respective quizzes a little more closely.
227. I like the current setup!
228. More clarity on ALEKS before the first day of class, so students can prepare.
229. It's pretty organized so none for now
230. Aleks can sometimes be helpful, but often doesn't actually teach me anything.
231. Less aleks
232. Make sure that the TA(s) have a deeper understanding of the labs and how the students are to navigate the lab, as opposed to simply being a supervisor.
233. Lessen the load of ALEKS, not remove it just adjust the amount required.
235. None
236. Less focus on ALEKS.
237. get rid of bitch ass aleks.
239. I honestly felt that the quizzes caused much more stress than help that they should have caused. In my opinion a majority of the quiz questions involved information that wasn't taught as in depth as the lecture or in the given notes. I often felt I was looking at content that wasn't familiar. In addition, the tests were difficult due to the fact that the phrasing of the questions were very different than what was taught. I felt as if all the hours of studying that I was doing everyday was for nothing. Although it wasn't the Prof. Craig's intention to have students struggle, the content felt difficult to understand at times.
240. None, Craig was my favorite professor she's awesome. I wish I went to Office Hours.
241. More time for taking tests.
242. Change this course so that students are not too worried about their low grades to concentrate on the material they are not engaging in.
243. Maybe leave less tricks on tests and quizzes. I understand the need to make students be careful in their conversions and processes. But to a certain extent, I learned to be more careful after the first exam. But studying became less about understanding topics and more about thinking of ways I was going to be tricked on exams.
244. Nothing.
245. Do more practice problems in class.
246. Less competitive grading scale.
247. Na
248. Providing online videos/resources that could further the understanding of difficult concepts.
249. Have more worksheets for weekly quizzes, instead of just providing one worksheet with 5-10 problems.

250. Having the lecture examples be slightly more difficult so you can see the applied knowledge. The difficulty should mirror the difficulty on what we are tested on.

IASystem Course Summary Reports summarize student ratings of a particular course or combination of courses. They provide a rich perspective on student views by reporting responses in three ways: as frequency distributions, average ratings, and either comparative or adjusted ratings. Remember in interpreting results that it is important to keep in mind the number of students who evaluated the course relative to the total course enrollment as shown on the upper right-hand corner of the report.

**Frequency distributions.** The percentage of students who selected each response choice is displayed for each item. Percentages are based on the number of students who answered the respective item rather than the number of students who evaluated the course because individual item response is optional.

**Median ratings.** IASystem reports average ratings in the form of item medians. Although means are a more familiar type of average than medians, they are less accurate in summarizing student ratings. This is because ratings distributions tend to be strongly skewed. That is, most of the ratings are at the high end of the scale and trail off to the low end.

The median indicates the point on the rating scale at which half of the students selected higher ratings, and half selected lower. Medians are computed to one decimal place by interpolation.<sup>1</sup> In general, higher medians reflect more favorable ratings. To interpret median ratings, compare the value of each median to the respective response scale: *Very Poor, Poor, Fair, Good, Very Good, Excellent (0-5); Never/None/Much Lower, About Half/Average, Always/Great/Much Higher (1-7); Slight, Moderate, Considerable, Extensive (1-4)*.

**Comparative ratings.** IASystem provides a normative comparison for each item by reporting the decile rank of the item median. Decile ranks compare the median rating of a particular item to ratings of the same item over the previous two academic years in all classes at the institution and within the college, school, or division. Decile ranks are shown only for items with sufficient normative data.

Decile ranks range from 0 (lowest) to 9 (highest). For all items, higher medians yield higher decile ranks. The 0 decile rank indicates an item median in the lowest 10% of all scores. A decile rank of 1 indicates a median above the bottom 10% and below the top 80%. A decile rank of 9 indicates a median in the top 10% of all scores. Because average ratings tend to be high, a rating of "good" or "average" may have a low decile rank.

**Adjusted ratings.** Research has shown that student ratings may be somewhat influenced by factors such as class size, expected grade, and reason for enrollment. To correct for this, IASystem reports **adjusted medians** for summative items (items #1-4 and their combined global rating) based on regression analyses of ratings over the previous two academic years in all classes at the respective institution. If large classes at the institution tend to be rated lower than small classes, for example, the adjusted medians for large classes will be slightly higher than their unadjusted medians.

When adjusted ratings are displayed for summative items, **relative rank** is displayed for the more specific (formative) items. Rankings serve as a guide in directing instructional improvement efforts. The top ranked items (1, 2, 3, etc.) represent areas that are going well from a student perspective; whereas the bottom ranked items (18, 17, 16, etc.) represent areas in which the instructor may want to make changes. Relative ranks are computed by first standardizing each item (subtracting the overall institutional average from the item rating for the particular course, then dividing by the standard deviation of the ratings across all courses) and then ranking those standardized scores.

**Challenge and Engagement Index (CEI).** Several IASystem items ask students how academically challenging they found the course to be. IASystem calculates the average of these items and reports them as a single index. *The Challenge and Engagement Index (CEI)* correlates only modestly with the global rating (median of items 1-4).

**Optional Items.** Student responses to instructor-supplied items are summarized at the end of the evaluation report. Median responses should be interpreted in light of the specific item text and response scale used (response values 1-6 on paper evaluation forms).

<sup>1</sup> For the specific method, see, for example, Guilford, J.P. (1965). *Fundamental statistics in psychology and education*. New York: McGraw-Hill Book Company, pp. 49-53.