

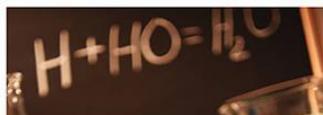


Faculty Review of Open eTextbooks

The [California Open Educational Resources Council](http://www.cool4ed.org) has designed and implemented a faculty review process of the free and open etextbooks showcased within the California Open Online Library for Education (www.cool4ed.org). Faculty from the California Community Colleges, the California State University, and the University of California were invited to review the selected free and open etextbooks using a rubric. Faculty received a stipend for their efforts and funding was provided by the State of California, the William and Flora Hewlett Foundation, and the Bill and Melinda Gates Foundation.

Textbook Name:

General Chemistry: Principles, Patterns, and Applications



General Chemistry:
Principles, Patterns,
and Applications



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Find it: [eTextbook Website](#)

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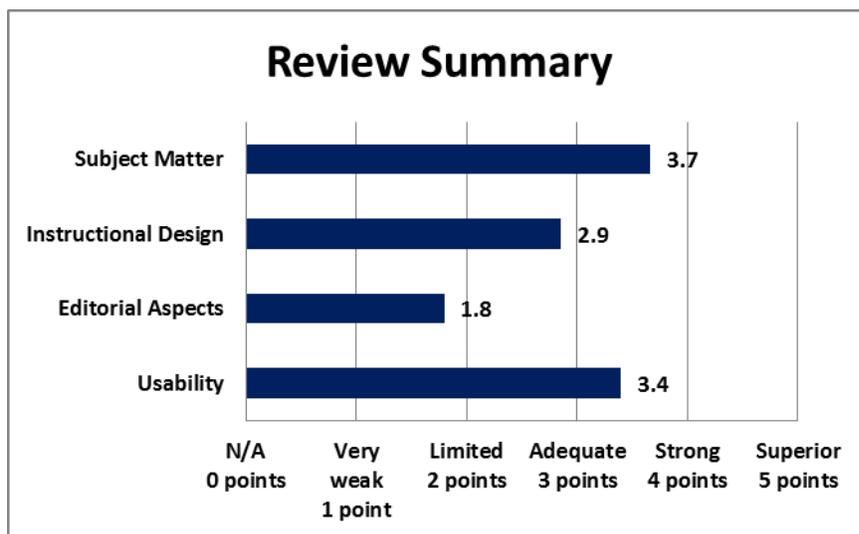
Professor

Format

Reviewed:

[Online](#)

A small fee may be associated with various formats.



Date Reviewed:

December 2015

California OER Council eTextbook Evaluation Rubric

CA Course ID: [CHEM 120S](#)

Subject Matter (30 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Is the content accurate, error-free, and unbiased?					X	

Does the text adequately cover the designated course with a sufficient degree of depth and scope?				X		
Does the textbook use sufficient and relevant examples to present its subject matter?				X		
Does the textbook use a clear, consistent terminology to present its subject matter?					X	
Does the textbook reflect current knowledge of the subject matter?				X		
Does the textbook present its subject matter in a culturally sensitive manner? (e.g. Is the textbook free of offensive and insensitive examples? Does it include examples that are inclusive of a variety of races, ethnicities, and backgrounds?)						X

Total Points: 22 out of 30

Please provide comments on any aspect of the subject matter of this textbook:

- The subject matter covered is appropriate for a college level introductory general chemistry course geared towards science majors. However, there are some issues with regard to the subject matter presented.
 - 1. On page 51 the description of an isotope having the same number of "electrons" is incorrect.
 - 2. In chapter 2 a better distinction between ionic & molecular compounds needs to be define, and the geometries of the compounds involving an understanding of the VESPER theory should not be presented. At the end of chapter 2 the topics of percent by mass, and combustion analysis should be presented. The flow chart pertaining to combustion analysis is confusing.
 - 3. In chapter 3 the concept of acid/base should not be presented at the same time as introducing the topic of ionic versus molecular compounds, as well as terminology associated to organic molecules such as, alkanes, alkynes, alcohols etc. should not at this point be presented.
- The topic of balancing equations is not clearly stated. Need to stress the not changing chemical formulas versus stoichmetic coefficients.
- On page 238 concept of limiting reagents, and percent yield calculations not presented clearly.
- On page 261 example 14, the presentation of checking oxidation state values not clear due to poor formatting.
- On page 265 the terms "condensation reaction & amide bonds" should not be presented, due not as yet having been properly introduced, Page 291 suddenly gas law type problems appear with having been introduced as yet.
- Figure 4.4 presents unusual method of balancing redox equations, as opposed to the conventional way of first mass balancing and then charge balancing.
- Page 604 concept of Effective nuclear charge not sufficiently addressed.
- Chapter 14 requires more description of how to perform initial rate law type studies to determine reaction orders. Need to distinguish initial rate law studies of time concentration type studies. No discussion of determining reaction order through half-life analysis. Very weak discussion on the topic of reactions mechanisms (i.e. slow step followed by fast step and reverse.) Need to elaborate of common ion effect and its relationship to establishing buffers.
- The aspects of required text book that are not met are:
 - 1. No table of context is provide.
 - 2. No index at the back of the book is provided.
- The aspects that this textbook does meet are good:
 - 1. Good images.
 - 2. Decent test banks within each chapter.

Instructional Design (35 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Does the textbook present its subject materials at appropriate reading levels for undergrad use?				X		
Does the textbook reflect a consideration of different learning styles? (e.g. visual, textual?)						X
Does the textbook present explicit learning outcomes aligned with the course and curriculum?					X	
Is a coherent organization of the textbook evident to the reader/student?			X			

Does the textbook reflect best practices in the instruction of the designated course?					X	
Does the textbook contain sufficient effective ancillary materials? (e.g. test banks, individual and/or group activities or exercises, pedagogical apparatus, etc.)			X			
Is the textbook searchable?	X					

Total Points: 20 out of 35

Please provide comments on any aspect of the instructional design of this textbook:

- The study problems are located throughout a particular chapter after a topic within the chapter is addressed. All the problems within a chapter should be presented at the end of the chapter in order to facilitate an instructor being able to assign them as a homework set.
- All Appendices should be presented at the end of the textbook and not dispersed through the entire textbook. For example to section related to Math Skills and solving quadratics.

Editorial Aspects (25 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Is the language of the textbook free of grammatical, spelling, usage, and typographical errors?		X				
Is the textbook written in a clear, engaging style?				X		
Does the textbook adhere to effective principles of design? (e.g. are pages laid out and organized to be clear and visually engaging and effective? Are colors, font, and typography consistent and unified?)		X				
Does the textbook include conventional editorial features? (e.g. a table of contents, glossary, citations and further references)		X				
How effective are multimedia elements of the textbook? (e.g. graphics, animations, audio)				X		

Total Points: 9 out of 25

Please provide comments on any editorial aspect of this textbook.

- The text book suffers from terrible editorial problems. The formatting is off throughout the text pertaining to font, font size, missing symbols and etc. In many cases rendering the text unreadable, and the chemical formulas and equations completely incorrect. For example on pages 22, 105, 200, 207, 237, 242, 264, 362, 430, 435, 470, 913, 939, 1642, and etc...
- The other issue is the presentation of molecules in the "Ball and Stick". This format is used throughout the text for no apparent reason. This presentation can be very confusing for a new student and should only be used at this time to illustrate a point, i.e., for VESPER discussion. Also these illustrating of way to big versus the rest of the text, for example pages 265, 269, 280, 708, 779, etc...

Usability (25 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Is the textbook compatible with standard and commonly available hardware/software in college/university campus student computer labs?					X	
Is the textbook accessible in a variety of different electronic formats? (e.g. .txt, .pdf, .epub, etc.)					X	
Can the textbook be printed easily?					X	
Does the user interface implicitly inform the reader how to interact with and navigate the textbook?		X				
How easily can the textbook be annotated by students and instructors?					X	

Total Points: 17 out of 25

Please provide comments on any aspect of access concerning this textbook.

- This text book in its current form is not appropriate for adoption as a general chemistry textbook. By and large it covers the required material quite well, and it has many good images in it. It also provides good problems within each chapter for homework assignments. I like the "Note the Pattern" segments within the chapters. I feel after numerous editing cycles this textbook does promise to be a good one, however, it is not ready for adoption in its current state.

Overall Ratings	Not at	Very Weak	Limited	Adequate	Strong	Superior

	all (0 pts)	(1 pt)	(2 pts)	(3 pts)	(4 pts)	(5 pts)
What is your overall impression of the textbook?			x			
	Not at all (0 pts)	Strong reservations (1 pt)	Limited willingness (2 pts)	Willing (3 pts)	Strongly willing (4 pts)	Enthusiastically willing (5 pts)
How willing would you be to adopt this book?	x					

Total Points: 2 out of 10

Overall Comments

If you were to recommend this textbook to colleagues, what merits of the textbook would you highlight?

- Most of the required material is covered.
- Good problems are offered.
- Good images.
- Like the "Note the Pattern" segments within the chapters.

What areas of this textbook require improvement in order for it to be used in your courses?

- Correct all formatting issues (and there are a lot).
- Getting rid of "stick and ball" drawings.
- Need table of context and index table.
- Address subject matter as stated above.
- Move all homework problems to end of related chapters.

We invite you to add your feedback on the textbook or the review to the [textbook site in MERLOT](#)
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