# Faculty Review of Open eTextbooks

The California Open Educational Resources Council 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 no/low cost and open etextboks 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:

## UC Davis ChemWiki



Find it: eTextbook Website

Textbook Founder and Director:
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Reviewed by:
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Institution:
University of California, Irvine

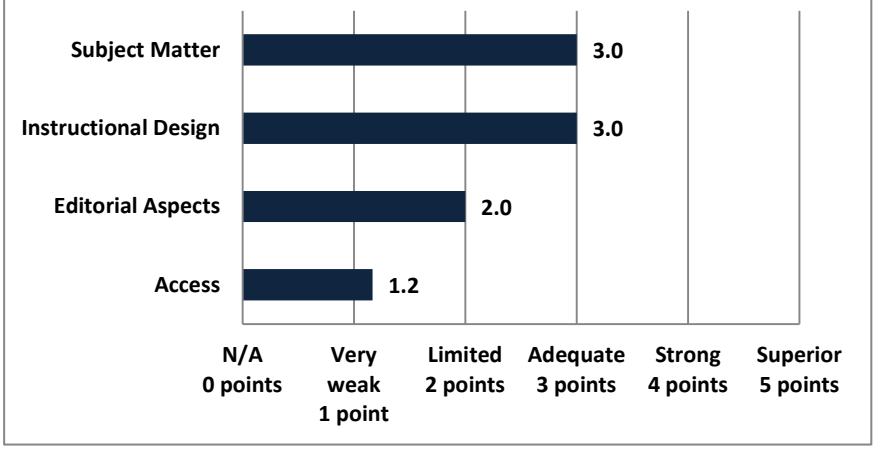
Title/Position:
Senior Lecturer SOE, Chemistry

Format Reviewed:
Online

A small fee may be associated with various formats.

Date Reviewed:
August, 2014.

### Review Summary




## California OER Council eTextbook Evaluation Rubric

**CA Course ID: CHEM 110 or 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: 18 out of 30

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

- The writing style and the presentation of the online materials are clear and easy to read. The topics are dealt with the right degree of detail and complexity, and are appropriate for the level of students. There are no major topics missing and the topics covered are adequate for a yearlong course. However, very few of the illustrations emphasize or convey the relationship between the microscopic (i.e., molecular-level) and the macroscopic (an important pedagogical tool in chemistry instruction).
- The worked examples and the end-of-chapter problems are not sufficient and need to be strengthened. Also, the answers to the end-of-chapter problems are incomplete.
- I strongly endorse having more of the conceptual type problems spread throughout the materials—both as worked-out-examples as well as end-of-chapter problems. These types of problems that are based on pedagogy do work and do enhance deeper student learning. They are much more important than the traditional algorithmic types of problems that this material tends to emphasize.

| **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: 13 out of 35 points

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

- The illustrations in the materials are fairly basic. Learning chemistry requires conceptualization and visualization skills as well as mathematical and problem solving skills. In addition, it requires the ability to integrate different perspectives of chemical phenomena at the macroscopic, molecular, symbolic, and graphical levels.
- Many beginning chemistry students have difficulty integrating these different viewpoints unless their relationships are emphasized, reinforced, and presented concurrently during instruction. Unfortunately, the instructional design of this material lacks this approach.

| **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 latid0out 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: 12 out of 25 points

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

This material lacks many of the additional features that other commercial textbooks provide (i.e., an integrated online homework system, power points of illustrations for instructors, test banks, animations, simulations, visualizations, etc.). I noticed that many of the illustrations and figures are missing (and replaced with the notice "Sorry! This image is permanently unavailable.").

| **Access (30 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: 7 out of 30 points

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

- This material was easily accessible using most standard Internet browsers. However, the material can only be navigated in a linear fashion.
- I could not find a way for students to annotate the material and there was no glossary of terms or other ancillary materials.

| **Overall Ratings** | | | | | | |
|---|---|---|---|---|---|---|
| | Not at all (0 pts) | Very Weak (1 pt) | Limited (2 pts) | Adequate (3 pts) | Strong (4 pts) | Superior (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** | | | |

## Overall Comments

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

- The writing style is clear and appropriate for the level of students. In most instances the topics are dealt with the right degree of detail and complexity.

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

- My primary reservation with the adoption of this WikiText is that it appears to be work in progress and is not yet at the level of most commercially available textbooks. Students need to understand the "interconnectedness" of chemical concepts and the relationships between the macroscopic world and the molecular world, as well as clear problem solving instruction. These are important themes that are emphasized in any commercially available general chemistry textbook but are sadly lacking in the WikiText. There is a greater emphasis in the WikiText on algorithmic solutions to problem solving and more worked examples of problems of the conceptual type need to be included.

We invite you to add your feedback on the textbook or the review to the textbook site in MERLOT.
(Please register in MERLOT to post your feedback.)

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For questions or more information, contact the CA Open Educational Resources Council