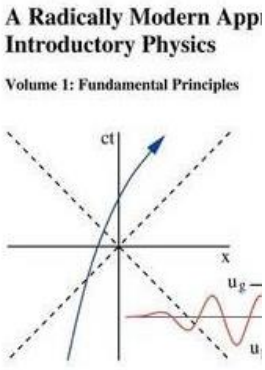
Faculty Review of Open eTextbooks

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 free 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:

A Radically Modern Approach to Introductory Physics



Find it: eTextbook Website

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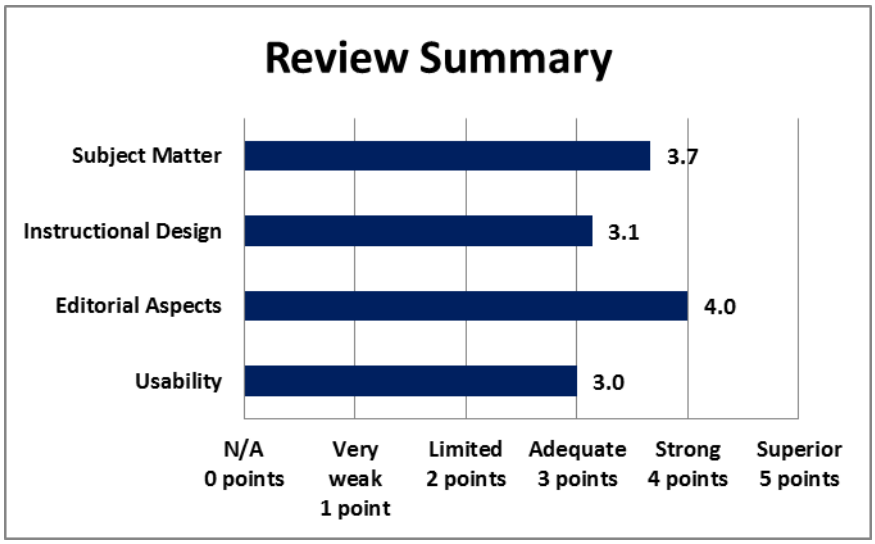
Format Reviewed:
Online

A small fee may be associated with various formats.



Date Reviewed:
December 2015

California OER Council eTextbook Evaluation Rubric

CA Course ID: PHYS 105

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:

- What I love about this book is its non-traditional approach and order. Unfortunately, this is also a non-starter in classes for the masses without complete departmental buy-in. I would give this book serious consideration for an honors course, but even then I would only use it if I were teaching both semesters of the year-long sequence, or had a prior agreement with the instructor for the other semester. This book, like many other fine non-traditional books, requires complete buy-in. It cannot be half-assed.

- Test banks are common, but are by no means necessary. Most good professors write their own questions, and test banks are often (unfortunately) multiple-choice.

- The lack of integration with an online homework system is a bigger barrier to adoption. It is not absolutely essential, but online homework has a number of pedagogical advantages in classes for the masses (namely, the questions can be randomized to fight cheating, and having a system to say "Nope, try again" encourages most students to work harder than they would if they just tried the problem once, wrote it up, and handed it in without knowing if they got it right.)

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: 22 out of 35

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

- What's an appropriate reading level for undergraduates? All too many freshmen verge on functionally illiterate. Is the appropriate level defined by whatever students the k-12 system hands us or by an objective standard? If there's an objective standard, then I would say that this book is actually better than most because its prose is actually worth reading. The earlier editions of classic books like Halliday were arguably worth reading, but the modern versions have as little prose as possible and as many side-bar examples as possible. This book, by contrast, actually has something to say, and it's readable by students who are capable of reading classic books like Purcell.

- As far as "learning outcomes", those words do not actually appear in here, but most physics faculty only use that dreaded word combo when interacting with the bureaucracy. When talking amongst ourselves, a real conversation might go something like this:

  "So, welcome to our school, our first semester course covers Newtonian mechanics and oscillations, but not waves and heat."

  "Good to know. What level is it at?"

  "Well, we ostensibly use some calculus, but most students won't be doing many integrals. It's important to get them to get good at solving problems than use conservation laws, however."

- That conversation actually conveys some information that is perfectly understandable by anyone in the discipline of in related disciplines (e.g. the chemists and engineers whose students take our courses could understand that conversation) but it does not use educrat terms like "Learning Outcomes."

- As far as ancillary materials, the homework problems are excellent (very little "plug and chug") but there is no material to borrow for a recitation, tutorial, problem-solving session, or other accompanying discussion-style section. An instructor would have to develop their own materials.

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: 20 out of 25

Please provide comments on any editorial aspect of this textbook:

- The layout is simple, but I honestly think that the lack of innumerable sidebars and whatnot is a feature. Your typical mass-market textbook has so many features on a page that it is practically sensory overload.

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: 15 out of 25

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

- It's a .pdf. You can use standard Adobe tools to add notes throughout.

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**				

Total Points: 6 out of 10

Overall Comments

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

- This book starts with modern physics and makes effective use of calculus, while still getting to key topics in Newtonian mechanics. If you want to teach an honors section that will avoid the trite "block on an inclined plane" you need to give this book very serious consideration.

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

- In order for this book to be used in any of our classes for the masses it would have to be made substantially worse, i.e. more traditional.

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.