OER Textbook Review

For each category, assign 1-5 stars (with 5 being best) and provide written details. There’s also space at the end for general comments. Please fill out electronically, then print the final product and have it signed by your department chair. You can either drop the printed and signed copy off to me in the library or send it through the inter-campus mail.

Comprehensiveness = 5 Stars
[The text covers all areas and ideas of the subject appropriately and provides an effective index and/or glossary.]

The text does a great job in covering the most important areas in Physics (for the first volume) and includes an index, glossary, and reviews of subjects covered throughout. This year I will teach courses in Dynamics and Vibrations, and I felt that both of these topics were touched on exactly how I would have hoped in such a large Physics text. If the text was fully printed, I feel it would be overwhelming to a student, but since it is available digitally, the length is not as imposing. Additionally, it would be clear that in the context of an undergraduate course, all 17 chapters would not be read through in a single semester in most cases.

Content Accuracy = 5 Stars
[Content is accurate, error-free, and unbiased.]

I was unable to find any significant errors in the content, specifically in the chapters that I focused on that are most relevant to my areas of expertise (1, 2, 3, 5, 12, 14, 15, 16, 17). I particularly wanted to try out a few problems from each chapter, and found that my solutions aligned with the given answers. Additionally, I found that the references materials were great resources. Of note here, I think the additional tools (links to applets, videos, etc.) are helpful (when they worked – see “interface” review), however the solution manual (available to instructors) does not format correctly when opened on my computer. I would suggest the authors include a .pdf copy so that all symbols are preserved no matter the computer/operating system used.

Relevance/Longevity = 4.5 Stars
[Content is up-to-date, but not in a way that will quickly make the text obsolete within a short period of time. The text is written and/or arranged in such a way that necessary updates will be relatively easy and straightforward to implement.]

Some areas (specifically in the first chapter) seemed slightly out of date, particularly the sections that have a narrative about the present and the future. GPS is discussed as a modern innovation, when in reality it seems to be so pervasive in modern culture that it doesn’t need to be discussed as “new” – there is also a
photo of an iPhone model from a few years ago that also makes it feel behind the times. This wouldn’t be as big a deal if it wasn’t one of the very first images in the text, but because it is in the first chapter, I think some care should be taken to make these photos exactly as the authors want them to be over the course of time.

Clarity = 4.5 Stars
[The text is written in lucid, accessible prose, and provides adequate context for any jargon/technical terminology used.]

While jargon/technical terms are explained well, I often find the more narrative-driven introductions to each chapter to fall somewhat flat, or take too long to get to their thesis. If the intent of this book is to be read one chapter at a time, but fully read as part of class-preparation, I feel that these sections should be made a bit more concise. I do believe that these are important for stirring the creative thinking skills within students, but I often found myself feeling like the writing for the intros and explanation sections would make more sense as spoken words, but come off a bit odd in text.

Overall, the writing is very accessible, and in the meat of each chapter, great strides are made to work fluidly through concepts in a chapter. I particularly appreciate that the sequential order in each chapter seems well thought out and is rigidly adhered to so that no concepts are introduced without an explanation and connection point. This is aided greatly by the substantial review at the end of each chapter which recalls all concepts, terms, and equations covered.

Consistency = 5 Stars
[The text is internally consistent in terms of terminology and framework.]

The writing tone is generally consistent from chapter to chapter and section to section. I mentioned earlier that the intro text is often a bit out of place to me, but I will admit that the later chapters do not share this same issue. This could be by choice – less narrative is needed once the fundamental concepts are instilled and connected, or may be a function of multiple authors. Either way, I did not find any section-to-section change to be noticeable or inconsistent, nor any chapter-to-chapter change. The review framework is very consistent, and the content of those reviews is a great strength of the text.

Modularity = 4.5 Stars
[The text is easily and readily divisible into smaller reading sections that can be assigned at different points within the course (i.e., enormous blocks of text without subheadings should be avoided). The text should not be overly self-referential, and should be easily reorganized and realigned with various subunits of a course without presenting much disruption to the reader.]

While the writing does a great job from chapter to chapter being mostly self-contained, the one area that makes modularity difficult is with the often-occurring references to previous chapters. I counted a handful that I came across, and if the entire text is to be used, these are wonderful additions and greatly assist a reader with making sometimes non-obvious connections. If the text is to be used modularly (which, at
almost 1000 pages, any University Physics class likely will need to), it leaves the instructor with the (small) task of cleaning up those few loose ends. I don’t see this as a very big issue, as it is a tradeoff between fluidity of the entire text and modularity within each unit, but I would deduct from a score on modularity specifically because of this.

**Organization/Structure/Flow = 5 Stars**

*[The topics in the text are presented in a logical, clear fashion.]*

I think this is a particular strength of the text – while I did not read the entire text end-to-end, each individual full chapter I delved into had great flow, and each chunk of chapters were in an order that clearly made sense to me. I think the layout of the content is great, and I felt that the authors have spent quite a bit of time finding the right way to present these ideas so that they build upon each other and avoid overwhelming the student (with a few exceptions as I mentioned in the “interface: section).

**Interface = 3 Stars**

*[The text is free of significant interface issues, including navigation problems, distortion of images/charts, and any other display features that may distract or confuse the reader.]*

I felt that this was the greatest weakness of the text (particularly in the first several chapters). The text interface was far from ideal to me in many ways. Primarily, the issue that caused the most frustration for me as a reader was the line-to-line text spacing. Depending on whether a line has formatted mathematic equation text, bolded text, figure references, or just plain text impacts the line height, making for some unsettling combinations of spacing within a paragraph and page. Pages 48-49 are a tipping point example to me where the page has content overload and a layout crisis. I think some work can be done to overhaul those particular examples, but also, the text as a whole.

The boldness and brightness of the links and figure icons may be rethought as well, I think it can be quite distracting within a page to have the figure link stand out so much.

The applet links are generally great, although it should be mentioned in the text that Flash and Java are required for almost all of them. Not all computers come standard with these installed these days, so it might be worth looking into other coding languages to produce these applets, or at least notify the reader ahead of time of the software requirements. Additionally, a few links appear to be broken when I access them (see pg. 57 for one example), and some have ads on the page with an applet (the very first link of the whole book on page 12!) which is very off-putting. It also made me uneasy because this text is a free resource, but someone is making income off of those ads, and I do not know who it is. If it is an author, that needs to be addressed, and if it is not, then perhaps the content source needs to be reevaluated. The prospect of free texts including ads in the book is a complete non-starter for me, so I was quite put off by seeing an ad so early in my examination of the text.

Regarding the images included, I found the choice of several photos to be a bit odd (particularly figure 1.2, the old, used iPhone that seems to be an off-center, skewed photo taken on another cell phone, and figure 1.11a, a quite decrepit looking double-pan mechanical balance). I think these photos should be
reassessed, particularly as the set the tone for the book as a whole. Figure labels need to be more consistent, as many do not address what is specifically being shown, such as on page 581. Drawn figures (such as for example problems) were done excellently, and appear on par with texts I have used previously.

Lastly, I found many of the bulleted lists (such as the terminology reviews at the ends of chapters), figure captions, and general text segments to have overlapping text issues. By this, I mean a second line is added to fit the final word of a long sentence, creating a very unsatisfying visual. I think these can be easily addressed to create a greater overall appearance.

**Grammatical Errors = 5 Stars**

*[The text contains no grammatical errors.]*

In my read through the text, I did not find any grammatical errors.

**Cultural Relevance = 3.5 Stars**

*[The text is not culturally insensitive or offensive in any way. It should make use of examples that are inclusive of a variety of races, ethnicities, and backgrounds.]*

While the text does not appear culturally insensitive or offensive to me, I felt that it was lacking in cultural relevance by missing some opportunities to show a more diverse set of people and examples. In general, the text uses lots of vehicles to explain force concepts. I think a great opportunity exists here to consider those that spend very little time in their lives using or thinking about transit, and focus on some other areas including household objects (such as furniture), more natural objects (trees, parks, other plants), and other areas that are not often considered.

Additionally, I found most of the drawn people had very light skin tones. While this may not be the most critical avenue for addressing diversity, I think it might be wise to include a more representative mix of skin tones for the many example people that are drawn in the text.

Lastly, I think the best area to address cultural, racial, ethic and other types of diversity is in the images and examples chosen. There are some great images that appear to be from or represent non-American culture, but there is very little mentioned about those images. A good example of this is Figure 17.28. The photo is of two black men performing on a “balafon”, a traditional Ghanaian mallet percussion instrument that is a predecessor to the modern marimba. None of this is mentioned in the text, and the caption on the figure simply states “Resonance has been used in musical instruments since prehistoric times. This marimba uses gourds as resonance chambers to amplify its sound”, giving no real cultural context to the photo, which I think is a missed opportunity. While I know it is a difficult task, I think textbooks should make every effort to take these opportunities to expand the reader’s understanding of different backgrounds, and I believe this can be done here without detracting from the text.
General Comments

Overall, I think University Physics: Volume I is a great open resource for students. The best feature is the structure and flow, initializing each new section and building throughout a chapter, and the weakest element is the visual layout (coloring, spacing, and labeling). While there are a few minor difficulties that would be had in making this modular for a smaller class focus, I think the opportunity is there to use this text in many different ways.

With the timeframe I had (and with this being the end of the semester), I was obviously not able to dig in as deeply as I would like given the text is nearly 1000 pages, but I felt I had the chance to completely read several chapters and get a good sense of the overall layout, content, and features. Some items I did not touch on earlier that I enjoyed in the text include the “unreasonable results” problems. I find that having students think of amounts in this context is a great way to instill fundamental understanding, I would like to see a few more of this style problem in each chapter, but I very happy to see some included.

There are some aspects that can use future work as I have mentioned, but I can certainly see our physics department using this as a replacement of the text I used as a student, and I can see myself adapting some chapters for my Dynamics or Vibrations classes – or could inspire a group of writers to make a similar open text for those areas. If you would like to discuss the text in greater detail, please let me know, and I would be happy to help.

From http://open.umn.edu/opentextbooks/ReviewRubric.aspx. This rubric was developed by BCcampus. This work is licensed under a Creative Commons Attribution 3.0 Unported license.
I have read the above review and shared it with the department.

__________Cy Yavuzturk_______________                                              __5/9/19________________
Department Chair                                                                                          Date

___________Chris Jasinski ______________                                            __5/9/19________________
Reviewer                                                                                          Date