

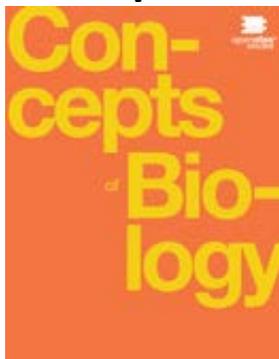


Faculty Review of Open eTextbooks

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 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:

Concepts of Biology



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Find it: [eTextbook Website](#)

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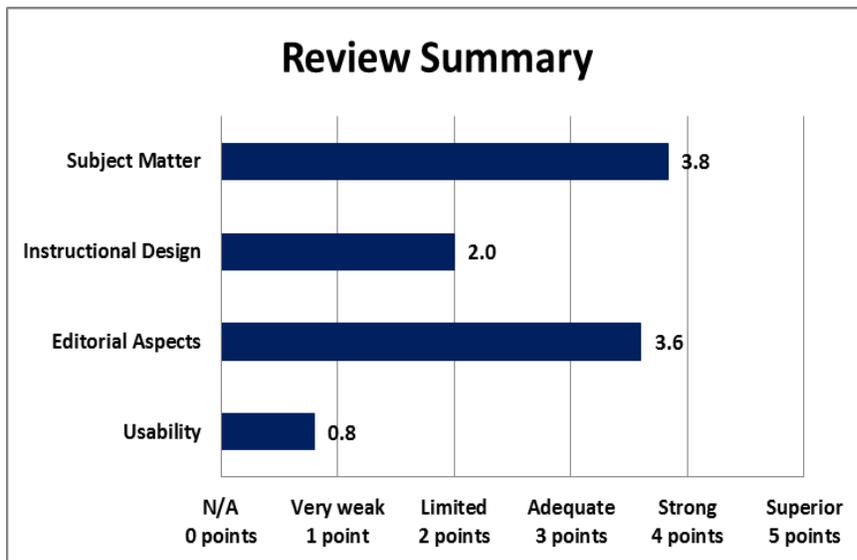
Format Reviewed:

[Online](#) and [PDF](#)

A small fee may be associated with various formats.

Date Reviewed:

October, 2014



California OER Council eTextbook Evaluation Rubric

CA Course ID: [BIO 1155](#)

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: 23 out of 30

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

- Specific Comments Related to Course Content for Biology 115. Human Anatomy and Physiology With Lab Conclusion: this text is not recommended for this course-115.
- Sections Specific to the Course Topics:
 - Chapter 3--Cell Structure and Function ("Cellular Structures")
 - Introduction: "For example, epithelial cells protect the surface of the body and cover the organs and body cavities within." Change to: "Epithelial cells cover and protect the outside of your body and also your internal organs." Change : "In spite of their enormous variety.." to (did you mean DESPITE?)
 - Get rid of "spites"--Change to: "Cells perform different functions, but just like a car, once you look 'under the hood' cars look very similar. They are all based on a very similar blueprint. Lets look 'under the hood' at a cell and see what structures they have in common."
 - 3.1: "A cell is the smallest unit of a living thing and like you, is considered an ORGANISM." Get rid of "thus" --"Cells are the basic building blocks of all organisms." Change: "Several systems"... to "These" systems functioning together form...
 - I love the inclusion of the section on Microscopy. This often is not included in bio texts or if it is, as a side article. I usually see this of course, in just bio lab manuals.
 - Define "inverted" --put "upside down" in parenthesis.
 - "inverted (upside down)"
 - It seems like the sentence "Two parameters that are important in microscopy..." should come earlier in this section as it is introductory information.
 - With a light microscope, total magnification is the lens objective mag. X the ocular (eye piece) magnification. This should be mentioned.
 - Cytotechnology--Pap Smear is the example. It says the sample is taken from "a patient". Last I checked, only women get Pap Smears and have a cervix. Why not say this? If you want to dance around the concept of a vagina, then maybe omit this example and use something else.
 - Cell Theory
 - Move the first paragraph (about van L.) into the Introduction about microscopes.
 - Keep the next two under Cell Theory.
 - Section 3.2 Comparing Pro and Eukaryotic Cells
 - Cell Structures—excellent
 - Histology--word is not defined or used anywhere in the text
 - Embryology--mentioned only briefly in text
 - Integumentary system-phrase not found in entire book
 - Skeletal system—ok
 - Muscular system explanation.—limited
 - Surface (External Anatomy) -limited
 - Nervous system-ok
 - Endocrine-ok
 - Cardiovascular system--phrase does not exist in book. This is placed under Circulatory and Respiratory system
 - Lymphatic system-ok
 - Urinary system-under homeostasis and osmoregulation
 - Digestive system-ok
 - Reproduction-Human Reproduction
 - Diseases--organ systems/healthy versus not--no explicit examples of these organ systems in diseased state but lots of discussion about diseases in general.

Instructional Design (35 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
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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: 14 out of 35

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

- Book on a standard Kobo E-reader is 860 pages. Is a student going to accept and in fact read a textbook that on a device, such as an e-reader, is 860 pages? We cannot get the students to read the textbooks, at least at the community college level. They have an aversion to reading anything beyond a text or tweet. This textbook on an e-reader is 860 pages and over 600 on a laptop. Will students read a text this long? These courses are also supposedly geared to non-majors? You are going to ask a non-major science student to download and read a 860 page textbook?
- What device will students use/prefer to read these textbooks? This has to be analyzed. Have the students themselves been queried and interviewed about this?
- It may be reasonable to release the chapters as needed by the student. Navigating through all these e-pages has not been exactly efficient, time wise, or easy. Make sure we release these e-books there is some consideration of the STUDENT'S experience in accessing and using them, part of which is identifying and recommending the best device.
- I reviewed general organization in the Table of Contents. Then my review focused only on the relevant content included in the course descriptions for 115, 110, and 120. Content outside of these courses was not reviewed however; a deficiency in the chapter on photosynthesis was noted. The chapter on photosynthesis is very inadequate. It lacks any mention of the three main photosynthetic pathways--C3, C4, and CAM. It also fails to mention the tremendous amount of research being done on these three pathways in response to climate change impacts and increased CO2 levels. This is a glaring deficiency in this text that must be addressed.
- GENERAL COMMENTS REGARDING THE TABLE OF CONTENTS (if any of these things have been edited/changed since I downloaded my version of this text, disregard my comments).
 - Table of Contents Organization Needs Refining/Better Organization
 - Why do you have both Roman Numerals and Numbers for Unit? (Ex: I. Unit 1.) Pick one, not both. It's confusing. Nix the Roman Numerals.
- Chapter 1-1.1
 - Levels of Organization of Living Things, Diversity, Branches of Bio Study are general introductory concepts that come at the end of this unit. Generally, go from broad, general concepts and narrow down. Unit gets specific right away and "broad" later on. Put in a logical progression. Be consistent.
 - Unit 1.2 it seems should come before Unit 1.1. This chapter needs to be edited for proper and logical organization.
 - Section 3.2 "Components" of Prokaryotic cells means what? Then this wording is lacking with Eukaryotic cells. Do you mean, parts of? Put Cell Size first under this unit. Students need context for this right away. Aren't ribosomes part of the endomembrane system? Clarify. Fermentation and glycolysis should be in sequence and their relationship clarified.
 - Section 4.2 should start out with the difference between aerobic and anaerobic respiration. This is stuck at the end of Section 4.4.
- Chapter 5- 5.1--what is the difference between the "Overview" and "Summary" of Photosynthesis?
 - Redundant or poorly organized. Put Summary of Photosynthesis under "Overview" without Main Structures. Leave Main Structures where it is and alone.
 - "The Two "Parts" of Photosynthesis"? Really? This is terrible. Refine. Or was this a typo and meant to say "The Two (Major--add) PATHS of Photosynthesis?"
 - There are three major types of photosynthesis: C3, C4, and CAM. This is a major focus of research in climate change as changes in CO2 levels are affecting photosynthesis. Something needs to be included about this. There is nothing. This is not acceptable.
 - "Interworkings"? Do you mean Inner Workings?
 - Break out "Photosynthesis in Prokaryotes" into its own section and add Eukaryotes. Put in appropriate order under 5.1 Move "The Energy Cycle" under 5.3 to 5.1 in appropriate order within 5.1

- Unit II. Unit 2 (Why Both # and Roman Numerals?) Move 6.4 Prokaryotic Cell Division into it's own section at the beg. of the unit. Under 6.1 Go from simple to more complex. It needs to come before the eukaryotic cell cycle. Build on simple concepts. Give this section the title "Asexual Reproduction" and cover all the ways organisms asexually reproduce. Mitosis (Binary fission), cloning, apomixis, etc. etc. Break unit into asexual reproduction and Sexual Reproduction.
- 8.3-Replace the word "Alternatives to Dom and..." to "Exceptions to Mendelian Genetics" Be consistent in the format regarding how you compare and contrast groups such as prokaryotes and eukaryotes. Don't bury prokaryotes into a section on eukaryotes. Break it out. I suggest going from least complex to more complex or from prokaryotes to eukaryotes. Again, building on the simple to the complex. Chapter 9 break it out by prokaryotes then eukaryotes.
- 9.1 The Structure of DNA (in prokaryotes and eukaryotes). The Structure of RNA (in prokaryotes and eukaryotes). How DNA is arranged in the cell: again, in prokaryotes versus eukaryotes.
- 9.2--you have only DNA replication of Eukaryotes. Add "DNA replication in Prokaryotes" "DNA Replication in Eukaryotes"--then elaborate below on the Eukaryotes.
- 9.3 --Transcription--"The Central Dogma"? Really? We are going to call it this? There are lots of other things then we can call "The Central Dogma"--omit. What is "Eukaryotic RNA Processing" and can it not fit under an existing category?
- Chapter 10.2--the super rock star of the plant world in biotech is Arabidopsis. <http://www.arabidopsis.org/> <http://www.arabidopsis.org/about/index.jsp>. It has one of the most studied genomes if not the most studied and elucidated on in the world. This information must be included in any mention of biotech and plants. Also see Dr. Norman Ellstrand's excellent book Dangerous Liasions--When Cultivated Plant Mate With Their Wild Relatives. Johns Hopkins Press.
- 10.3--reorganize. Mitochondrial Genomics is buried in between New Biofuels and Forensic Analysis? Move it to a more appropriate location or even up in Section 10.3 but do not leave it there.
- 11.4--It is often referred to as "Geographic Isolation" not "separation but perhaps a student will grasp it better with the word "separation". Still, this is not convention. The idea behind this is the potential new species is genetically isolated (i.e. Founder Effect/Bottleneck Effect). To be totally accurate, we could say "Speciation from Genetic Isolation"; "Speciation Without Genetic Isolation".
- 12.1 I assume this section mentions Cladistics. I am reading only the TofC.
- Chapter 13 needs to be reorganized. Put all the introductory descriptive information first:
 - Pro Diversity-Early life...
 - Chars of Prokaryotes
 - The Prokary Cell/Cell Wall
 - Reproduction/How Pro Obtain...
 - Human's Historical Perspective -The Up and Down Side-Good News and the Bad News, etc.
 - Something like this--
 - Biofilms
 - Prokaryotes in and On the Body
 - Downsides:
 - Bact Diseases in Humans
 - Antibiotic Crisis
 - Foodborne Diseases
 - UpSides
 - Beneficial Prokaryotes like--
 - Use in Food and Beverages
 - Cleaning up Our Messes-
 - Bioremediation
- Rest of it looks ok.

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		
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Total Points: 18 out of 25

Please provide comments on any editorial aspect of this textbook.

- Figures should attempt to use all the space on a page--be BIG, as big as possible, for a student reader. Use the space. Maximize the opportunity to elucidate.
- Figures are too small sometimes. Students these days are visual learners (they live their lives looking at screens) and seem to acquire the information much more quickly with excellent GRAPHICS, examples, and analogies.
- This is especially true for non-majors.

Usability (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: 4 out of 30

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

- NA = I don't know the answer to many of these as I downloaded it on to my lap top and e-reader for the purposes of reviewing only.

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	
How willing would you be to adopt this book?	Not at all (0 pts)	Strong reservations (1 pt)	Limited willingness (2 pts)	Willing (3 pts)	Strongly willing (4 pts)	Enthusiastically willing (5 pts)
				x		

Overall Comments

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

- It's an e-book and was relatively easy to download and use. The text, of what I read, appears to be free of excessive "gobbly gook." It reads clearly if the goal is to reach the beginning/non-major science student.

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

- I do feel the organization can be tightened up, the chapter on photosynthesis needs to be improved, more real-world examples, and larger figures.

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