

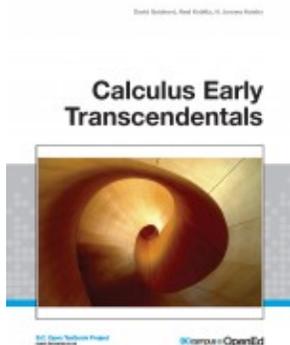


## Faculty Review of Open eTextbooks

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](http://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:

### BC Campus: Calculus – Early Transcendentals



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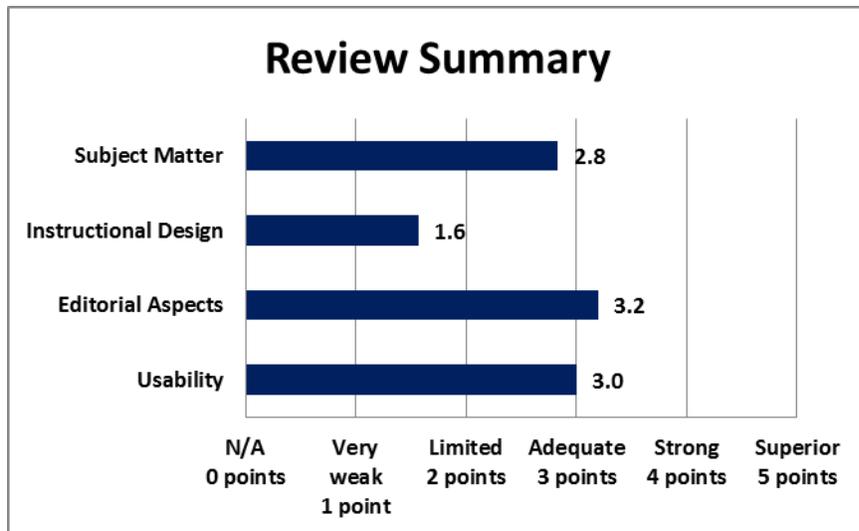
Reviewed:

[Online](#)

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Date Reviewed:

August 2015



### California OER Council eTextbook Evaluation Rubric

CA Course ID: [MATH 210](#)

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: 17 out of 30

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

- **Limits:** The definition of a limit is presented in Section 2.3. The text primarily focuses on the formal definition of a limit. There is one example on using the numerical method for determining limits and three examples on computing limits algebraically. The graphical approach is presented as an exercise at the end of the section. Limits are revisited in Sections 4.2 and 4.10. The Squeeze Theorem is presented in Section 4.2 along with a discussion on the limit of  $\sin(x)/x$  and the limit of  $(\cos x - 1)/x$ . L'Hopital's Rule and limits approaching infinity are discussed in Section 4.10. Overall, there is not much content for limits.
- **Derivatives:** We first see the definition of the derivative in Section 2.4, the section immediately after limits. Chapter 3 focuses on the rules for finding derivatives. Chapter 4 is on the derivatives of transcendental functions. Implicit differentiation is also covered in this chapter. Curve sketching and the Mean Value Theorem is presented in Chapter 5. Chapter 6 deals with applications such as optimization, related rates, linear approximations, and Newton's Method.
- The definition of continuity is given in Section 2.5. There are no examples or exercises on continuity.
- We see the second derivative being used to find concavity in curve sketching, but higher order derivatives are not discussed anywhere else in the text.
- Leibniz's notation is pushed aside (there's a statement about  $dy/dx$  being used instead of  $y'$ ) in favor of the prime notation for derivatives in this textbook.
- **Integration:** Integration is introduced with two examples. One of those examples talks about using rectangles to approximate the area under the curve. There is no mention of Riemann sums. After the two examples, we see a brief section on the Fundamental Theorem of Calculus, then it's right into the properties of integrals. The substitution method is found in the chapter on techniques integration.

<b>Instructional Design (35 possible points)</b>	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: 11 out of 35

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

- The typical student might find this textbook difficult to read. The authors are consistent about using mathematical terminology - definitions, theorems, and proofs are given. There are few visuals other than graphs and geometric figures. The text is definitely geared towards textual learners.
- There are no learning outcomes for the sections, or for the chapter. The organization of the material is not standard. We go from a brief discussion of limits right into derivatives. Derivatives cover four

chapters, and limits gets a total of three sections scattered throughout the book. Integration has three chapters, but only the first chapter (3 sections) is covered in a first semester calculus class. Substitution is placed in Techniques of Integration chapter.

- Other than the exercises at the end of the section, there are no other ancillaries to this textbook.

<b>Editorial Aspects (25 possible points)</b>	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: 16 out of 25

Please provide comments on any editorial aspect of this textbook.

- The textbook is grammatically and mathematically accurate.
- It is not written for your typical first semester calculus student at the community college level.
- It does have a table of contents, index, and answers in the back like a typical math book. The online version has a button after each exercise that gives the student the answer instead of having to go to the end of book.
- There are links throughout the book that take you to related diagrams and examples.

<b>Usability (25 possible points)</b>	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.

- The textbook is available in three formats: PDF, TeX, and online. The PDF format is standard. Familiarity with LaTeX is required for the the TeX file. The online version was generated from the TeX source, so there are some differences between the pdf version and the online version.
- In numbering the exercises, we see that the problems at the end of each section in the PDF version are labeled 1, 2, 3, etc. At the end of the exercises in online text, the problems are numbered 1.1.1, 1.1.2, and so on. The section number precedes the problem number. Some of the content in the online text require a Java plug-in. In the PDF version, there are some graphics do not align with the example/exercise as in the online version.

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: 3 out of 10

## Overall Comments

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

- This is a straight-forward calculus textbook. The authors keep everything to a minimum. The content is mathematically correct and very rigorous.

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

- For a student taking calculus for the first time, this text may be difficult to read. Sometimes it is hard to understand what the authors are getting at or where they are going. For example, the authors state that the second derivative of  $f$  tells us that  $f'$  is increasing or decreasing and use it to talk about concavity, but there is no discussion of higher derivatives in the textbook prior to that. There is a section on higher order derivatives in Chapter 14 for functions of several variables, but not for single variables.
- We don't see the numerical, graphical and algebraic approaches being applied throughout the textbook.
- The textbook definitely needs more material on limits, continuity, and integrals.

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