California Open Online Library for Education & Accessibility

COOL4Ed (the California Open Online Library for Education) was created so that faculty can easily find, adopt, utilize, review and/or modify free and open etextbooks for little or no cost. The COOL4Ed accessibility open textbook evaluations can inform faculty, staff, and students how the free and open etextbooks meet 15 accessibility "checkpoints" that could impact the learning of learners with a range of disabilities.

SUMMARY OF ACCESSIBILITY EVALUATION:

Textbook: **Information Systems for Business and Beyond**
Format of Textbook: **PDF**

Assistive Technology (AT) Evaluation Score: Overall	**7.4 (Maximum score = 10)**
Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, see list below, are typically not used or available by the general public into the accessibility evaluation process. • Accessibility features of desktop operating systems (e.g. high-contrast display themes, settings from the Keyboard and Mouse control panels) • Accessibility-related software included with desktop operating systems (e.g. VoiceOver, Microsoft Narrator) • Third-party accessibility software and hardware: • Screen readers (e.g. JAWS, Window Eyes) • Magnification software (e.g. ZoomText Magnifier/Reader, MAGIC Pro with Speech) • Reading software for users with learning disabilities (e.g. Read and Write Gold, Kurzweil 3000) • Refreshable Braille displays	
Non- Assistive Technology (NAT) Evaluation Score: Overall	**6.1 (Maximum score =10)**
Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.	

COOL4Ed Accessibility Evaluation Methods:

The California State University Accessible Technology Initiative and MERLOT (Multimedia Educational Resources for Learning and Online Teaching) developed the rubric or "checkpoints" for the accessibility evaluation. CAST, a nationally recognized organization with expertise in accessibility and UDL, reviewed and affirmed the appropriateness and value of the accessibility evaluation rubric and contributed the references and support resources to help people learn how best to design, evaluate, and remediate the learning materials to maximize the accessibility of the learning resources for all. The "checkpoints" have been built upon the Section 508 technical standards and has been organized and tailored to the typical characteristics of digital resources used in higher education courses.

The accessibility evaluations were performed by the Center for Usability in Design and Accessibility at California State University, Long Beach; faculty and graduate students with expertise in human factors, usability, and accessibility performed the evaluations of over 150 free and open etextbooks. COOL4ed.org has published the accessibility evaluation rubric and provides a detailed description of the methodology used to evaluate the accessibility of the etextbooks in COOL4ed.

LOOKING FOR DETAILED ACCESSIBILITY REPORTS?

See Detailed Accessibility Evaluation Report using Assistive Technologies

See Detailed Accessibility Evaluation Report using Non-Assistive Technologies

DETAILED ACCESSIBILITY EVALUATION REPORT using Assistive Technologies

Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, such as Kurzweil and NVDA, are typically not used or available by the general public into the accessibility evaluation process.

1. Accessibility Documentation

A. The organization providing the online materials has a formal accessibility policy.	**Fail**
Additional Information:	**There were no links provided for additional information regarding the formal accessibility policy. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**There were no links provided for additional information regarding the accessibility statement. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**There were no links provided for additional information regarding accessibility. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

2. Text Access

A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality.	**Pass**

Additional Information:	**6/6 pages were analyzed and passed text to speech. Pages 9 through 15 were used for this analysis. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**6/6 pages were analyzed and passed text size compatibility. Pages 9 through 15 were used for this analysis. The text content of the chapter allowed for adequate text size adjustment between the ranges of 30% to 300% zoom. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).	**Fail**
Additional Information:	**3/6 pages were analyzed and passed. Pages 9 through 15 were used for this analysis. Passing pages allowed for adequate adjustment of the font/background color. The failing pages did not display any text content and were pages 10, 12, and 14. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

4. Reading Layout

A. Text of the digital resource is compatible with assistive technology that allows the user to reflow the text by specifying the margins and line spacing (or is rendered by an application	**Pass**

such as a browser, media player, or reader that offers this functionality).	
Additional Information:	**6/6 pages were analyzed and passed. Pages 9 through 15 were used for this analysis. Content allowed for adequate text reflow between 30% and 300% zoom levels. Horizantal scrolling was not required. Results may vary depending on screen size. Text reflow was analyzed using a standard Toshiba laptop with a 16 inch screen size. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**N/A**
Additional Information:	**0/0 pages were analyzed and passed. We do not have access to the printed versions of the text content. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	**Pass**
Additional Information:	**5/5 pages were analyzed and passed for digital resource layout. Pages 9 through 15 were used for this analysis. The reading order for digital resource content logically corresponded to the visual layout of the page when rendered by assistive technology. The program used to analyze the digital resource layout was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**

6. *Structural Markup/Navigation*

A. The text of the digital resource includes markup (e.g. tags or styles) that allows for navigation by key structural elements (chapters, headings, pages) using assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**0/9 pages were analyzed and passed markup for navigational text. Pages 9 through 18 were used to analyze navigational text. The text of the digital resource did not include markup that allowed for navigation by heading levels using assistive technology. All headings were black text on a white background. The program used to analyze navigational text was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**0/10 lists were analyzed and passed for structural markup of lists. Pages 9 through 29 were used to analyze lists. The text of the digital resource did not included markup for bullets and numbered lists that was compatible with assistive technology. The lists could not be identified by assistive technology, however, the items within each list could be navigated and identified with assistive technology which is why this section scored a 6 which is still failing. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
C. If the text of the digital resource is delivered within an ebook reader application, a method	**N/A**

is provided that allows users to bypass the reader interface and move directly to the text content that is compatible with assistive technology.	
Additional Information:	**0/0 text content analyzed for structural markup for eReader application. No additional eReader application being used in this evaluation. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**

7. Tables

A. Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**1/10 tables were analyzed and passed markup. Tables were taken from pages 15 through 47. Failing tables did not include markup that identified row and column headers in a manner that was compatible with assistive technology. The only passing table within the analyzed pages was found on page 19. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**

8. Hyperlinks

A. In-book links take you to a location within the textbook. For example, the table of contents would be considered in-book links and embedded links take you to the correct location in the book.	**Fail**

Additional Information:	**10/30 within text links were analyzed and passed. The passing links were able to be identified by assistive technology took you to the correct location. Links were taken from page 4. The failing links were all represented either by a number or had no information corresponding to them. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Pass**
Additional Information:	**This is a combined average of the following two subsections of the links description and functionality. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**20/20 live links were analyzed and passed for functionality. The links were taken from pages 9 through 28. The passing links took you to the correct location . The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**9/20 live links were analyzed and passed for adequate link description. The links were taken from pages 9 through 28. There was no adequate descriptions of the failing links that aided in determining where they would take you. Failing links had no adequate description of the link provided that was compatible with assistive technology, and were presented in the form of a URL address. The program used to analyze text content was NVDA**

	which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.

9. Color and Contrast

A. All information within the material that is conveyed using color is also available in a manner that is compatible with those that do not perceive color, and information conveyed by color is also conveyed in other ways.	**Fail**
Additional Information:	**0/9 pages were analyzed and passed for color redundancy. Pages 18 through 27 were analyzed. The text content was not color redundant in that it did not provide adequate means of distinguishing the content aside from color. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**This is an average score taken from the combined sub sections of the color and contrast field. The content was analyzed using the color contrast analyzer tool.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**9/9 pages were analyzed and passed for adequate header color contrast. Pages 18 through 27 were used for analysis. 24/24 headings analyzed passed. All headings were black text on a white background. The content was analyzed using the color contrast analyzer tool. The program used to analyze text content was Adobe Reader Pro XI.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**

Additional Information:	**9/9 pages were analyzed and passed for adequate text color contrast. Pages 18 through 27 were used for analysis. 18/18 text samplings analyzed passed. All standard text samplings were of black text on a white background and links sampled were of dark blue text on a white background. The content was analyzed using the color contrast analyzer tool. The program used to analyze text content was Adobe Reader Pro XI.**
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**9/9 pages were analyzed and passed color contrast. Pages 62 through 71 were used for analysis. 6/6 simple images analyzed passed. The content was analyzed using the color contrast analyzer tool. The program used to analyze text content was Adobe Reader Pro XI.**

10.Language

A. The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology.	**Fail**
Additional Information:	**The text of the digital resource did not include markup that declares the primary language of the text document content in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
B. If the digital resource includes passages in a foreign language, these passages include markup that declares the language in a manner that is compatible with assistive technology.	**N/A**

Additional Information:	**The accessibility tools for this program only analyze the primary language of the text document. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

11.Images

A. Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	**Pass**
Additional Information:	**6/7 non-decorative images were analyzed and passed. Pages 9 through 26 were used for this analysis. Although the reader could not access the image, alternate text descriptions were provided for each passing image that were compatible with assistive technology. The single failing image was found on page 10 and could not be recognized by assistive technology and had no alternate text description. The program used to analyze navigational text was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	**Pass**
Additional Information:	**5/5 decorative images were analyed and passed. Pages 9 through 26 were used for this analysis. The decorative images were marked in a manner that allowed them to be ignored by the reader. The program used to analyze navigational text was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
C. Complex images, charts, and graphs have longer text descriptions that are compatible	**Pass**

with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).	
Additional Information:	**1/1 complex images were analyzed and passed. The complex image was found on page 21. Although the reader could not access the content of the image a longer alternate text description was provided. The program used to analyze navigational text was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	**N/A**
Additional Information:	**No multimedia were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
B. A transcript is provided with all audio content.	**N/A**
Additional Information:	**No multimedia were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
C. Audio/video content is delivered via a media player that is compatible with assistive technology. This includes support for all criteria listed in Section 15 below.	**N/A**
Additional Information:	**We are not using any additional assistive technology to open audio/video content at this time. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

13.Flickering

A. The digital resource content does not contain anything that flashes more than three times in any one-second period.	**Pass**
Additional Information:	**While analyzing book material there was no flickering on any of the pages. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

14.Science, Technology, Engineering, and Math (STEM)

A. STEM figures have appropriate markup that indicates that the image is a figure.	**Fail**
Additional Information:	**0/10 STEM figures were analyzed and passed. The STEM figures were taken from pages 52 through 86. The figures were not marked up in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
B. STEM graphs have appropriate markup that indicates that the image is a graph.	**Fail**
Additional Information:	**0/6 STEM graphs were analyzed and passed. The STEM graphs were taken from pages 21 through 141. The graphs were not marked up in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
C. STEM equations have appropriate markup that indicates that the image is an equation.	**N/A**
Additional Information:	**0/0 text content analyzed and passed. No STEM content was found for this within the text resource.**

	The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.
D. STEM tables have appropriate markup that indicates the image is a table.	**Fail**
Additional Information:	**1/6 STEM tables were analyzed and passed. The STEM tables were taken from pages 15 through 148. The failing tables were not marked up in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	**Pass**
Additional Information:	**10/10 STEM figures were analyzed and passed. The STEM figures were taken from pages 52 through 86. The resource does convey both the notation (presentation) and meaning (semantics) of the STEM content. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	**Pass**
Additional Information:	**5/6 STEM graphs were analyzed and passed. The STEM graphs were taken from pages 21 through 141. The resource conveyed both the notation (presentation) and meaning (semantics) of the STEM content for passing graphs. The failing graph was found on page 128 and could not be adequately described by assistive technology and had no text description of the graph content. The program used**

	to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	**N/A**
Additional Information:	**0/0 text content analyzed and passed. No STEM content was found for this within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
H. Assistive technology used can access the content from the STEM tables.	**Fail**
Additional Information:	**1/6 STEM tables were analyzed and passed. The STEM tables were taken from pages 15 through 148. The resource does convey both the notation (presentation) and meaning (semantics) of the STEM content for the single passing table. Failing tables could not be accesses by assistive technology and had no text decriptions of the content. The program used to analyze text content was NVDA which is an open source screen reader for Windows. The program used to analyze text content was Adobe Reader Pro XI.**

15.Interactive Elements

A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology.	**N/A**
Additional Information:	**No interactive elements were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for**

	Windows. Adobe Reader XI Pro was used to access the text content of the book.
B. Each interactive element conveys information to assistive technology regarding the element's name, type, and status (e.g. "Play, button, selected").	**N/A**
Additional Information:	**No interactive elements were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**
C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	**N/A**
Additional Information:	**No interactive elements were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Adobe Reader XI Pro was used to access the text content of the book.**

DETAILED ACCESSIBILITY EVALUATION REPORT using Non-Assistive Technologies

Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.

1. Accessibility Documentation

A. The organization providing the online materials has a formal accessibility policy.	**Fail**

Additional Information:	**No Content Found.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**No Content Found.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**No Content Found.**

2. *Text Access*

A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality.	**Pass**
Additional Information:	**Pgs 9-14 were checked. The text is available to assistive technology that allows user to enable text-to-speech functionality.**

3. *Text Adjustment*

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Pgs 1-5 were checked. When the window page chaged in size, no horizontal bar appeared. The font size of all pages checked could be adjusted.**
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).	**Fail**
Additional Information:	**Pgs 8-13 were checked. When changing the font/background color to green text on black, the background color did change to black and the font color did change to green. However for page 10 and 12, the text disappeared and did not change to green. The text-to-speech function was able to read the text however, the text was not visible for pages 10 and 12.**

4. Reading Layout

A. Text of the digital resource is compatible with assistive technology that allows the user to reflow the text by specifying the margins and line spacing (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**Pgs 8-13 were checked. When reflowing the text, the text to speech function did work. The text was available for assistive technology. The text was able to reflow. Except that on pages 10 and 12 the text disappeared. The text-to-speech function still was reading the text.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**N/A**
Additional Information:	**Need additional information. We do not have printed material to compare it too.**

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	**Pass**
Additional Information:	**Pgs 9-14 were checked. The reading order was logical on all five pages.**

6. Structural Markup/Navigation

A. The text of the digital resource includes markup (e.g. tags or styles) that allows for navigation by key structural elements (chapters, headings, pages) using assistive technology (or is rendered by an application	**Fail**

such as a browser, media player, or reader that offers this functionality).	
Additional Information:	**The tagged PDF, Headings, and Title all failed using the accessibility checker. Bookmarks passed.**
B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**There were no list structural markups. The Tagged PDF, Headings, and Title all failed using the accessibility checker. Bookmarks passed.**
C. If the text of the digital resource is delivered within an ebook reader application, a method is provided that allows users to bypass the reader interface and move directly to the text content that is compatible with assistive technology.	**Fail**
Additional Information:	**There was none found. The Tagged PDF, Headings, and Title all failed using the accessibility checker. Bookmarks passed.**

7. Tables

A. Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**0/5 tables included alternative text that identified as rows and columns headers. The tables were on pages 15, 19, 25, 34, and 45. The text-to-speech function read the tables by row but did not identify the rows or column as headers. In other words in only read them by row and never mentioned that it was reading row 1 (headers). Using the accessibility**

	checker, the rows TH and TD, headers and regularity all failed.

8. *Hyperlinks*

A. In-book links take you to a location within the textbook. For example, the table of contents would be considered in-book links and embedded links take you to the correct location in the book.	**Pass**
Additional Information:	**19/19 within hyperlinks worked. All within links were found on page 4. Only 19 within links were found throughout the book. All within links were found in the beginning of the book. All links worked and were descriptive enough to convey meaning. Using the Acessibility checker, navigation links passed.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**18/20 live links worked. The link were found on pages 1, 2, 3, 4, 5, 6, 7, 8, 9 (2 links), 10, 11, 12, 13, 14 (2 links), 15, and 16. Two links on page 3 did not work; the page was not found. All links, except for the link on page 9, were in URL form. The text-to-speech function read the link in URL form. Using the accessibility checker, the navigation links passed.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**20/20 live links worked. The link were found on pages 1, 2, 3, 4, 5, 6, 7, 8, 9 (2 links), 10, 11, 12, 13, 14 (2 links), 15, and 16. The accessibility checker showed nagivation links passed.**
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**1/20 live links were descriptive enough. The link were found on pages 1, 2, 3, 4, 5, 6, 7, 8, 9 (2 links), 10, 11, 12, 13, 14 (2 links), 15, and 16. All links were in URL (www.) form, except for the link on page 9. The text-to-speech function read the links in URL**

	form. Using the accessibility checker, navigation links passed.

9. *Color and Contrast*

A. All information within the material that is conveyed using color is also available in a manner that is compatible with those that do not perceive color, and information conveyed by color is also conveyed in other ways.	**Pass**
Additional Information:	**Pgs 9-18 were checked. Information not conveyed by color alone. Size of font was used to convey information as well as the style (bold vs non-bold text, italics vs print). The chapter titles larger is size compared to the rest of the text. Links were in blue throughout the text.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**Pgs 9-18 were checked. Most pages had the contrast ratio of 4.51:1 and above (19.17:1). The chapter titles were larger in size compared to the rest of the text. The chapter titles passed with 21.0:1. There was text in italics which passed with a ratio of 20.04:1. Small headers at the top of the page failed with a ratio of 18.33:1. Links were in blue and passed with a ratio of 7.82:1.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**Pgs 9-18 were checked. Large chapter headings passed with a ratio of 21.0:1. Small headers at the top of the page failed with a ratio of 18.33:1.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Pgs 9-18 were checked. The text on pages checked had the contrast ratio of 4.51:1 and above (19.17:1). The chapter titles were larger in size compared to the rest of the text. The chapter titles passed with 21.0:1. There was text in italics which passed with a ratio of**

	20.04:1. Small headers at the top of the page failed with a ratio of 18.33:1. Links were in blue and passed with a ratio of 7.82:1.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Fail**
Additional Information:	**Pgs 9-18 were checked. Simples images failed with a ratio of 4.51:1 and below (Example: On page 10, the simple image failed with a ratio of 2.38:1).**

10.Language

A. The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology.	**Fail**
Additional Information:	**Using the accessiblity checker the primary language failed.**
B. If the digital resource includes passages in a foreign language, these passages include markup that declares the language in a manner that is compatible with assistive technology.	**Fail**
Additional Information:	**Using the accessiblity checker the primary language failed.**

11.Images

A. Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	**Fail**
Additional Information:	**7/10 non-decorative images included alternative text. Images were found on pages 10. 11, 12 (2 images), 13, 14, 16, and 22 (3 images). Figures alternative text failed. Images on pages 10, 11, and**

	22 did not include alternative text that was compatible with text-to-speech function.
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	**N/A**
Additional Information:	**No Decorative images found. Figures alternative text failed.**
C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).	**Fail**
Additional Information:	**0/10 complex images had descriptive alternative text. Images were found on pages 15, 19, 25, 34, 45, 46 (3 images), and 47. All complex images did not have alternative text that conveyed meaning on the images. Figures alternative text failed.**

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	**N/A**
Additional Information:	**No content found.**
B. A transcript is provided with all audio content.	**N/A**
Additional Information:	**No content found.**
C. Audio/video content is delivered via a media player that is compatible with assistive technology. This includes support for all criteria listed in Section 15 below.	**N/A**
Additional Information:	**No content found.**

13.Flickering

A. The digital resource content does not contain anything that flashes more than three times in any one-second period.	**Pass**
Additional Information:	**Pgs 1-10 were checked. No flickering content was observed. Using the accessibility checker, screen flicker passed.**

14.Science, Technology, Engineering, and Math (STEM)

A. STEM figures have appropriate markup that indicates that the image is a figure.	**N/A**
Additional Information:	**No STEM content found throughout the book.**
B. STEM graphs have appropriate markup that indicates that the image is a graph.	**N/A**
Additional Information:	**No STEM content found throughout the book.**
C. STEM equations have appropriate markup that indicates that the image is an equation.	**N/A**
Additional Information:	**No STEM content found throughout the book.**
D. STEM tables have appropriate markup that indicates the image is a table.	**N/A**
Additional Information:	**No STEM content found throughout the book.**
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	**N/A**
Additional Information:	**No STEM content found throughout the book.**
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	**N/A**
Additional Information:	**No STEM content found throughout the book.**
G. STEM equations have appropriate notation markup that conveys both the notation	**N/A**

(presentation) and meaning (semantics) of the STEM content.	
Additional Information:	**No STEM content found throughout the book.**
H. Assistive technology used can access the content from the STEM tables.	**N/A**
Additional Information:	**No STEM content found throughout the book.**

15.Interactive Elements

A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology.	**N/A**
Additional Information:	**No Interactive Element Present.**
B. Each interactive element conveys information to assistive technology regarding the element's name, type, and status (e.g. "Play, button, selected").	**N/A**
Additional Information:	**No Interactive Element Present.**
C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	**N/A**
Additional Information:	**No Interactive Element Present.**