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Name: Digital Lab Manual Version 3 (v3)

Description: Content delivery modules for use on the web and within learning management system applications.

Date: 2.16.2018

Contact Information: www.eScienceLabs.com/Support

Evaluation Methods Used: NVDA, Chrome Vox, human review, Microsoft Accessibility Checker (.docx), Acrobat Accessibility Checker (.pdf)

Summary Table

Guideline	Applicable	Compliance
Web Content Accessibility Guidelines 2.0 (WCAG)	**Yes**	**Levels A & AA**
Section 508 Accessibility	**Yes**	**Optimization List**
Section 1194.21 Software Applications & Operating Systems	**Yes**	**Supports with exceptions**
Section 1194.22 Web-Based Intranet & Internet Information & Applications	**Yes**	**Supports with exceptions**
Section 1194.23 Telecommunications Products	**No**	**Not Applicable**
Section 1194.24 Video & Multimedia Products	**Yes**	**Supports**
Section 1194.25 Self-Contained, Closed Products	**No**	**Not Applicable**
Section 1194.26 Desktop & Portable Computers	**No**	**Not Applicable**
Section 1194.31 Functional Performance Criteria	**Yes**	**Supports**
Section 1194.41 Information, Documentation, & Support	**Yes**	**Supports**

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Web Content Accessibility Guidelines 2.0 (WCAG)

The following table outlines how we've optimized the eScience Labs content modules for the Version 3 Student Lab Manual and later to support WCAG 2.0 criteria, Levels A and AA.

WCAG Requirement	Level	Support
1.1.1 Non-text Content All non-text content that is presented to the user has a text alternative that serves the equivalent purpose.	**A**	Supported. Alternate text can be defined for each object in eScience Labs Version 3 (V3) content modules. Learners must use supported screen readers and browsers for eScience Labs V3 content modules.
1.2.1 Audio-only and Video-only (Prerecorded) An alternative for time-based media is provided.	**A**	Supported. Closed captioning or synchronized text boxes are used throughout all V3 content modules and video content.
1.2.2 Captions (Prerecorded) Captions are provided for all prerecorded audio content in synchronized media.	**A**	Supported. Closed captioning or synchronized text boxes are used throughout all V3 content modules and video content.
1.2.3 Audio Description or Media Alternative (Prerecorded)	**A**	Supported. Transcripts, descriptive audio and visual context are part of the design of eScience Labs time-based media. If higher level visually descriptive transcripts and alternative presentations are required a request may be made to the eScience Labs product development team.
1.2.4 Captions (Live)	**AA**	**Not Applicable**

1.2.5 Audio Description (Prerecorded) In synchronized media.	**AA**	Supported. Transcripts, descriptive audio and visual context are part of the design of eScience Labs time-based media. If higher level visually descriptive transcripts and alternative presentations are required a request may be made to the eScience Labs product development team.
1.3.1 Info and Relationships Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.	**A**	Supported. Alternate text is added to objects to provide context and logical structure to content modules. Alternate text and a meaningful tab order has been added to reading sections, images, tables and cells to optimize them for screen readers. Learners must use supported screen readers and browsers for eScience Labs V3 content modules.
1.3.2 Meaningful Sequence When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined.	**A**	Supported. A custom tab order is set and tested for a logical reading order.
1.3.3 Sensory Characteristics Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, size, visual location, orientation, or sound.	**A**	Supported. Instructions for operation are supplied through video, audio and captioned content. Ease of use and logical structures are built into the design for screen readers and other accessibility tools.

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1.4.1 Use of Color Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	**A**	Supported. Color is not used exclusively for conveying the meaning of information.
1.4.2 Audio Control If any audio on a Web page plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.	**A**	Supported. Screen readers can access audio controls.
1.4.3 Contrast (Minimum) The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for large text, incidental text, or logotypes.	**AA**	Supported. All visual presentations of text have a contrast ratio of at least 4.5:1.
1.4.4 Resize Text Text can be resized without assistive technology up to 200 percent.	**AA**	Supported. Screens are dynamic and allow zooming to at least 200%.
1.4.5 Images of Text If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text.	**AA**	Supported. Text is used to convey information instead of images. In any case where text cannot be used alternative text has been provided.

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2.1.1 Keyboard	**A**	Supported. If drag-and-drop or hotspot interactions are included an alternate, keyboard-controlled presentation is provided.
2.1.2 No Keyboard Trap	**A**	Supported. Keyboard control in screen readers are tested to ensure logical flow through content.
2.2.1 Timing Adjustable	**A**	**Not Applicable**
2.2.2 Pause, Stop, Hide	**A**	Supported. Pause, close, play and other means of controlling media content have been provided in every instance and are accessible by keyboard controls in accessibility software.
2.3.1 Three Flashes or Below Threshold	**A**	Supported. Content modules do not contain anything that flashes more than 3 times in a second.
2.4.1 Bypass Blocks A mechanism is available to bypass blocks of content that are repeated on multiple Web pages.	**A**	Supported. The skip navigation feature allows users to bypass repetitive content and access the slide content immediately when tabbing through a course.
2.4.2 Page Titled	**A**	Supported. The course title is specified in the player properties for each module.
2.4.3 Focus Order If a Web page can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.	**A**	Supported. A custom tab order is set and tested for a logical reading order.

2.4.4 Link Purpose (In Context)	**A**	Links have contextual descriptions to clearly communicate the purpose of the link.
2.4.5 Multiple Ways More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process.	**AA**	Supported. A built-in menu feature has been added to modules to facilitate multiple options for navigating through content.
2.4.6 Headings and Labels Headings and labels describe topic or purpose.	**AA**	Supported. Headings and labels are used to describe the subject of each slide in a content module. Use of labels are directly related to the items they describe.
2.4.7 Focus Visible Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible.	**AA**	Supported. A rectangle indicating focus is displayed when tabbing from item to item.
3.1.1 Language of Page	**A**	Supported. A language identifier has been added to the published output for screen readers and specified for lists and player text. The language used is English.
3.1.2 Language of Parts	**AA**	Supported with exceptions. The language identifier for an entire course has been set. The modules do not support setting the screen reader language for individual objects.

3.2.1 On Focus When any component receives focus, it does not initiate a change of context.	**A**	Supported. The focus does not initiate items automatically. Users have the option to initiate an interaction or process after they are given a description by pressing the *Enter* key or an equivalent command. They have the option to skip the interaction by tabbing through content.
3.2.2 On Input Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behavior before using the component.	**A**	Supported. The focus does not initiate items automatically. Users have the option to initiate an interaction or process after they are given a description by pressing the *Enter* key or an equivalent command. They have the option to skip the interaction by tabbing through content.
3.2.3 Consistent Navigation	**AA**	Supported. Navigation and button selections, structure and layout are consistent throughout the modules.
3.2.4 Consistent Identification	**AA**	Supported. Item names and functionality are consistent. The structure and layout are consistent throughout the modules to help ease identification of items.
3.3.1 Error Identification	**A**	Supported. Automatic feedback screens are generated on knowledge check and lab drill questions. Lab drill quizzes provide results slides with an option to “Retry Quiz” if an acceptable score was not achieved.
3.3.2 Labels or Instructions	**A**	Supported. Learners are given instructions when they need to interact with module content.

Labels or instructions are provided when content requires user input.		
3.3.3 Error Suggestion	**AA**	Supported with exceptions. Learners are given feedback when they respond incorrectly in interactions and quizzes. Future development of more robust feedback items are planned for the content modules.
3.3.4 Error Prevention (Legal, Financial, Data)	**AA**	**Not Applicable**
4.1.1 Parsing In content implemented using markup languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.	**A**	Supported. Version 3 content modules are generated in a well-formed HTML output. All JavaScript triggers are well-formed.
4.1.2 Name, Role, Value	**A**	Supported. The user interface of uses standard HTML and HTML 5.

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Section 508 Accessibility Optimization

Section 508 Requirement	Compliance
Image Consistency	Consistent meaning has been used when images identify controls, status indicators and other programmatic elements.
Non-Visual Operation and Information Retrieval	eScience Labs content modules v3 are JAWS, NVDA and Chrome Vox compatible. The reading order has been structured in a logical way and tested.
Animation (Alternative)	Alternate, non-animated content has been added to convey information in all animations.
Content Focus	A yellow box around screen elements that are the focus reports to assistive technology.
Flicker Reduction	eScience Labs content modules v3 do not use flashing or blinking text, objects or other elements with a frequency greater than 2 Hz and lower than 55 Hz.
Keyboard	Alternate, keyboard-controlled interactions have been provided wherever a drag-and-drop or hotspot interaction is used.
Color Coding (Alternative)	Color coding is not used as the only means of conveying information.
Multimedia (Alternative Synchronization)	All multimedia has text captions that are synchronized to the audio or video. Triggers have been added to allow students to stop and start all in-slide multimedia.
Text-Only (Alternative)	A text version of the course is available in Microsoft Word format.

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Text Equivalents	Alt text has been added to every non-text element that is pertinent to the content and not purely decorative.
Large Text	The content modules v3 are output in a dynamic format that can be enlarged up to, at least, 200%.
Skip Links	Learners can skip repetitive navigation links by selecting the “skip navigation” option that is easily found using a screen reader.
Open/Closed Captions	Captions are provided for all informational videos, multimedia, and audio. Learners can stop and start all in-slide multimedia pieces using keyboard controls.
Audio Descriptions	Audio descriptions are provided for content.
User-Selectable Audio and Text Descriptions	All audio descriptions can be selected by the user.
Support for Hearing Impaired	Notes, captions, transcripts and text alternatives are provided for each course.

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1194.21 Software Applications and Operating Systems

Criteria	Explanations
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Full keyboard support for all functions that can be discerned textually.
(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	eScience Labs v3 content modules do not disrupt or disable accessibility features.
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.	A yellow box around shapes has focus and reports the current focus to assistive technology.
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.	eScience Labs v3 content modules report the object type, state, and description to assistive technology.
e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.	Labeling of programmatic elements is consistent and tested for logical structure using assistive technology tools.

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(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.	eScience Labs content modules V3 exposes textual information to assistive technology with the exception of caret position for text inputs. Caret position is not a function required to use current modules. Text attribute information is also currently unavailable.
(g) Applications shall not override user selected contrast and color selections and other individual display attributes.	eScience Labs content modules for V3 do not inherit user display settings.
(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.	Users are provided with audio and text for every animation.
(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Color coding is not used as the only means of conveying information.
(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.	Color selections produce contrast levels of 7:1 for normal text and 4.5:1 for large text. Images and other items were reviewed with contrast level considered.
(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.	Flashing or blinking text, objects, or other elements have not been included in the design.
(l) When electronic forms are used, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Form controls have been provided for assistive technology. Instructions and cues have been added to forms and submission fields.

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1194.22 Web-Based Intranet & Internet Information & Applications

Criteria	Supported	Explanations
a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).	**Yes**	All non-text elements provide proper text equivalents to assistive technology.
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.	**Yes**	Text captions are synchronized with audio and video.
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.	**Yes**	Color is not the only means of conveying information.
(d) Documents shall be organized so they are readable without requiring an associated style sheet.	**Yes**	Style sheets are not required.
(e) Redundant text links shall be provided for each active region of a server-side image map.	**Not Applicable**	There are no server-side image maps in the content modules.
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	**Not Applicable**	There are no client-side image maps in the v3 content modules.
(g) Row and column headers shall be identified for data tables.	**Yes**	Data is presented in tabular fashion and is customized with proper alt-text where necessary.

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(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.	**Not Applicable**	There are no built-in table objects.
(i) Frames shall be titled with text that facilitates frame identification and navigation.	**Not Applicable**	There are not frames in the Version 3 Content Modules.
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	**Yes**	eScience Labs content modules v3 does not contain content that causes the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.	**Yes**	Text-only versions of courses are available in a Microsoft Word format.
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.	**Yes**	Functional text can be read by assistive technology.
(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).	**Yes**	If a user does not have the correct plug-in, eScience Labs content modules v3 provides a link to the plug-in that complies with §1194.21(a) through (l).
(n) When electronic forms are designed to be completed online, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	**Yes**	Form controls provide full data to assistive technology. Instructions and cues have been added to increase flow and functionality.
(o) A method shall be provided that permits users to skip repetitive navigation links.	**Yes**	A “Skip Navigation” button permits users to skip repetitive navigation links.
(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.	**Not Applicable**	eScience Labs content modules v3 do not contain timed responses.

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1194.24 Video and Multimedia Products

Criteria	Supported	Explanations
(a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.	**Not Applicable**	There is no display hardware.
(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.	**Not Applicable**	There is no display hardware.
(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.	**Yes**	Text is synchronized with audio and video content throughout all content modules in v3 format.
(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.	**Yes**	Text is synchronized with audio and video content throughout all content modules in v3 format.
(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.	**Yes**	Alternate text and audio descriptions are provided.

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1194.31 Functional Performance Criteria

Criteria	Supported	Explanations
(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for assistive technology used by people who are blind or visually impaired shall be provided.	**Yes**	eScience Labs content modules v3 support assistive technology, such as the JAWS screen reader. Most elements are keyboard accessible and provide sufficient information to be read by assistive technology. Exceptions include drag-and-drop and hotspot interactions, alternate versions of these activities are provided where necessary to create an equivalent experience.
(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for assistive technology used by people who are visually impaired shall be provided.	**Yes**	Text can be enlarged, zoomed and / or provided in an alternate compliant format.
c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for assistive technology used by people who are deaf or hard of hearing shall be provided.	**Yes**	Text is synchronized with audio and video content throughout all content modules in v3 format.
(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.	**Yes**	Users have control over start, stop and volume of audio elements.

(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for assistive technology used by people with disabilities shall be provided.	**Yes**	Content modules do not require user speech.
(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.	**Yes**	Keyboard controls and assistive technologies can be used to operate modules.

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1194.41 Information, Documentation, and Support

Criteria	Supported	Explanations
(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge.	**Yes**	End-users can access free product support documentation in a variety of formats.
(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge	**Yes**	Descriptions of the accessibility and compatibility features are provided in a variety of formats, free of charge.
(c) Support services for products shall accommodate the communication needs of end-users with disabilities.	**Yes**	eScience Labs customer support will accommodate the communication needs of end-users with disabilities.