Best Practices and Practical Examples to Implement Principles of UDL and Improve Course Accessibility

Fully participating in online, hybrid or traditional Blackboard (Bb) Learn courses can be challenging for students with visual, auditory or motor impairments. While the Americans with Disabilities Act (ADA), Blackboard Learn, and Disability Support Services (DSS) all play a part in equal opportunities to learn, this handout focuses on creating an understanding of Universal Design for Learning (UDL), along with fifteen best practices and practical examples that faculty can implement now in their course content to improve course accessibility.

Best Practices and Practical Examples to Implement Principles of UDL and Improve Course Accessibility

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Objectives

1. Understand Universal Design for Learning (UDL) and its role in curriculum development.

2. Determine how well you are currently deploying the principles of UDL.

3. Be able to implement best practices and practical examples, by applying the principles of UDL,

    and make your course more accessible to all students.

Figure above is a Wordle consisting of keywords that describe the content in this handout.

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Universal Design

Universal Design is about creating an environment that benefits ALL of us, including people with disabilities. It's about recognizing the reality of diversity, offering alternatives and building correctly from the start to benefit the most people. Retrofitting or rebuilding later requires more time and money.

Examples:

Who benefits from sloped sidewalks?

- People with strollers
- Small children
- Someone using a cane
- Rollerbladers
- and yes, people in wheel chairs

Who benefits from Closed Captioning?

- People in noisy environments (gyms, airports, adults with small children at home, etc.)
- People with a disabled sound card or no headset
- People who feel the person in the video is speaking too quickly
- and yes, people that may be hearing impaired
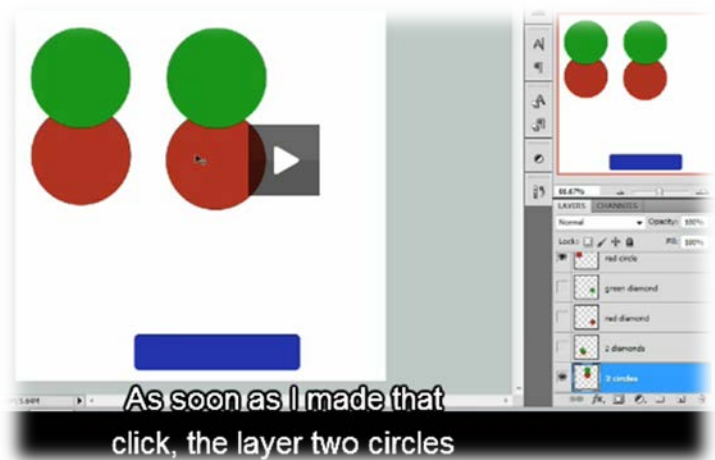
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Universal Design for Learning (UDL)

CAST is a non-profit organization that focuses on Universal Design for **Learning**, not sloped sidewalks in your environment; however, the idea is the same. The UDL focus is a universally designed curriculum that benefits ALL learners, including those with disabilities. It's about recognizing the reality of diversity, offering alternatives, and developing a curriculum from the start that gives all individuals equal opportunities to learn. Below is a set of UDL principles for curriculum development. The principles should be thought of as a set of *guidelines* to assist in the development of instruction that is accessible to diverse learners. It is just that, a guideline. It is not a rigid checklist.

I. Provide Multiple Means of Representation	II. Provide Multiple Means of Action and Expression	III. Provide Multiple Means of Engagement
1: Provide options for perception 1.1 Offer ways of customizing the display of information 1.2 Offer alternatives for auditory information 1.3 Offer alternatives for visual information	**4: Provide options for physical action** 4.1 Vary the methods for response and navigation 4.2 Optimize access to tools and assistive technologies	**7: Provide options for recruiting interest** 7.1 Optimize individual choice and autonomy 7.2 Optimize relevance, value, and authenticity 7.3 Minimize threats and distractions
2: Provide options for language, mathematical expressions, and symbols 2.1 Clarify vocabulary and symbols 2.2 Clarify syntax and structure 2.3 Support decoding of text, mathematical notation, and symbols 2.4 Promote understanding across languages 2.5 Illustrate through multiple media	**5: Provide options for expression and communication** 5.1 Use multiple media for communication 5.2 Use multiple tools for construction and composition 5.3 Build fluencies with graduated levels of support for practice and performance	**8: Provide options for sustaining effort and persistence** 8.1 Heighten salience of goals and objectives 8.2 Vary demands and resources to optimize challenge 8.3 Foster collaboration and community 8.4 Increase mastery-oriented feedback
3: Provide options for comprehension 3.1 Activate or supply background knowledge 3.2 Highlight patterns, critical features, big ideas, and relationships 3.3 Guide information processing, visualization, and manipulation 3.4 Maximize transfer and generalization	**6: Provide options for executive functions** 6.1 Guide appropriate goal-setting 6.2 Support planning and strategy development 6.3 Facilitate managing information and resources 6.4 Enhance capacity for monitoring progress	**9: Provide options for self-regulation** 9.1 Promote expectations and beliefs that optimize motivation 9.2 Facilitate personal coping skills and strategies 9.3 Develop self-assessment and reflection
Resourceful, knowledgeable learners	**Strategic, goal-directed learners**	**Purposeful, motivated learners**

Show the information in different ways

Allow students to approach learning tasks and demonstrate what they know in different ways

Offer options that engage students and keep their interest

Resources and Tips

UDL resource: http://www.udlcenter.org/sites/udlcenter.org/files/updateguidelines2_0.pdf

What is Universal Design for Learning? http://www.youtube.com/watch?v=bDvKnY0g6e4

Examples and Resources of UDL: http://www.udlcenter.org/implementation/examples
Excellent resource for EACH guideline on the previous page to help you implement principles of UDL

Center for Applied Special Technology (CAST), a non-profit organization that focuses on Universal Design for Learning: http://www.cast.org/about/index.html

Americans with Disabilities Act, a federal law that protects persons with disabilities from discrimination: http://www.ada.gov

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How Well Are You Reaching Students Through the Principles of UDL?

1. **Ideas and information represented in multiple ways?**
    - ☐ Your course syllabus clearly describes the content and your expectations of the students.
    - ☐ You present information in multiple formats (e.g., lecture, text, graphics, audio, video, hands-on exercises.
    - ☐ You begin each lecture with an outline of what will be covered.
    - ☐ You summarize key points throughout the lecture, and tie these points to the larger course objectives.
    - ☐ You post electronic equivalents of paper handouts and required reading assignments in alternative formats such as audio and video.
    - ☐ You employ technologies (e.g., i-Clickers) that enhance learning.

2. **Students can express their comprehension in multiple ways?**
    - ☐ You encourage students to demonstrate knowledge and skills in ways other than traditional texts and exams (e.g., written essays, projects, portfolios, journals).
    - ☐ Your assessments measure students' achievement of the learning objectives, as they are stated on the syllabus.
    - ☐ You incorporate technologies that facilitate class communication and participation.
    - ☐ You allow assignments to be submitted electronically.

3. **Students have multiple opportunities for engagement?**
    - ☐ You express enthusiasm for each topic you teach, and explain its real-world significance.
    - ☐ You challenge students with meaningful assignments.
    - ☐ You create a class climate in which student diversity is respected.
    - ☐ You give prompt and instructive feedback on assignments.
    - ☐ You supplement lecture and reading assignments with visual aids (e.g., photographs, videos, diagrams, interactive simulations).
    - ☐ You make yourself available to students during office hours in flexible formats (e.g., face-to-face, email, online chat, telephone).

If you answered YES to most or all of these questions, congratulations! You are reaching more students through the principles of Universal Design for Learning.

Resource: http://accessproject.colostate.edu/udl/documents/index.cfm

Resources and Tips

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Assistive Technologies

Accessible course content may not always be enough for all students. While Universal Design increases the likelihood of access to course content, students may still need accommodations to access courses. Assistive technology fills a gap between materials created using Universal Design and the needs of the student. The next few pages are examples of some of the many assistive technologies available.

JAWS

Freedom Scientific is a manufacturer of assistive technology products, including JAWS screen reader software, for those who are blind or have low vision. JAWS reads text in documents, browsers, and other windows, along with letting users navigate within the Windows operating system to access menus, dialog boxes, and more.

To learn what it's like for the visually impaired student to use JAWS, download the free demo version (117MB): http://www.freedomscientific.com/products/fs/jaws-product-page.asp
The demo lets you use the software for limited time periods and then you must reboot your computer to continuing using it.

Screen reader tutorials and demos:

- http://library.blackboard.com/d/?eb3b04cd-4d39-4af0-9d2d-a3f32a95430f
- http://www.blackboard.com/Platforms/Learn/Resources/Accessibility/Accessibility-Resources.aspx
- Listen to JAWS navigating Blackboard: http://www.blackboard.com/Platforms/Learn/Resources/Accessibility/JAWS-Demo.aspx

Adobe Read Out Loud Text-to-Speech Tool
Read Out Loud is built into Adobe Reader. It differs from a screen reader in that it only reads text contained within a document window. To use Read Out Loud, you will need Adobe Reader 6.0 or later and the Text-to-Speech engine installed on your operating system.

To locate the Speech Properties in Windows, click **Start** and then type **text to speech** in the search box.
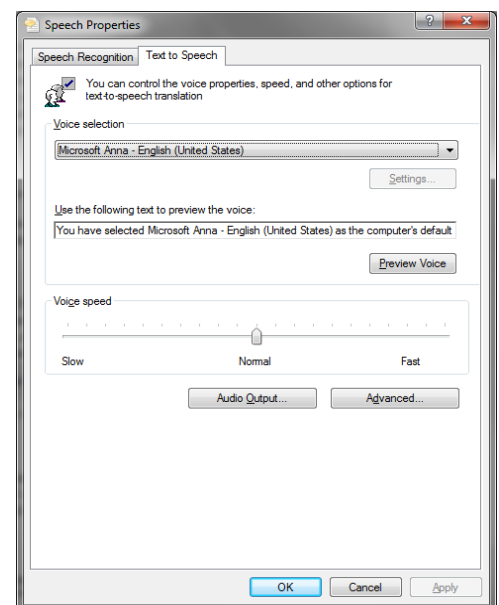
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Below are two screen captures of the Adobe Acrobat window and the Read Out Loud tool being activated and then used to read the document out loud. The document shown in the screen captures is a PowerPoint file that was converted into pdf. Read Out Loud also reads alternative text to convey meaning of images, as does screen readers. See page 19 to learn about Alternative Text.
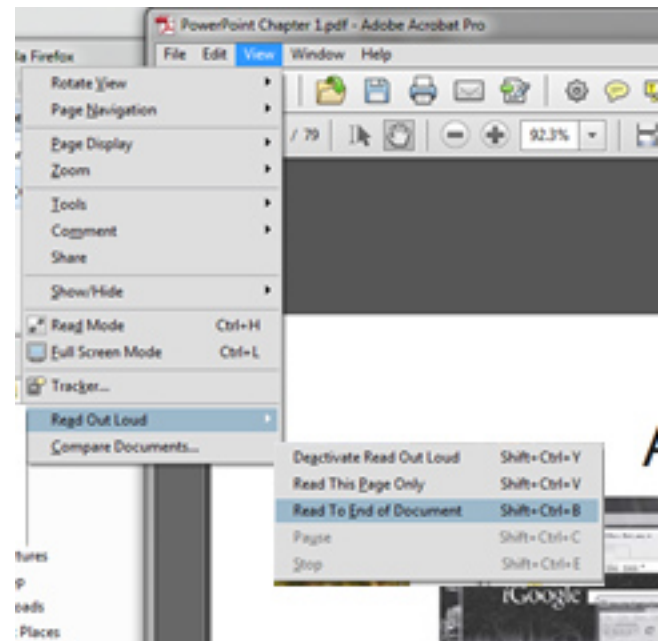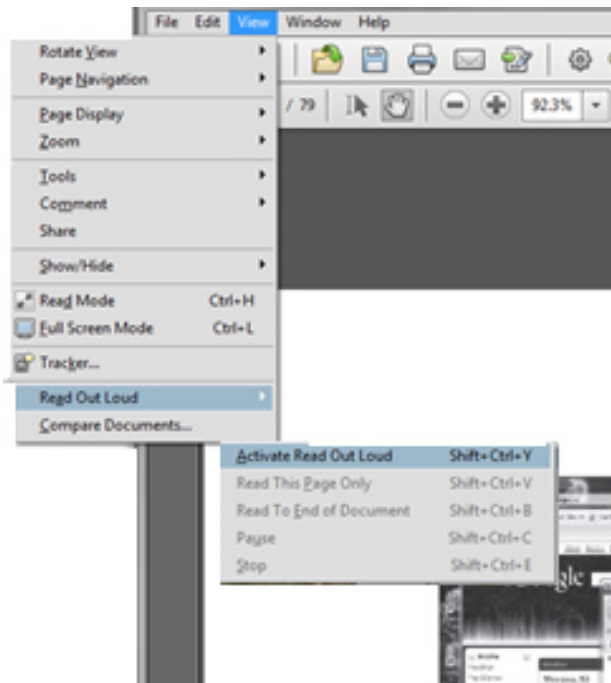
Resources and Tips

I used the Adobe Acrobat X Pro 30 day trial:
http://success.adobe.com/en/na/sem/products/acrobatx/1108_8209_acrobatxpro.html?kw=try&sdid=IAZXC&skwcid=TC|22188|acrobat%20pro||S|b|11570346742

Acrobat X is an excellent tool to convert Microsoft Office documents to PDFs and it includes the Read Out Loud feature too.

Most useful keyboard shortcuts to use Read Out Loud:
SHIFT+CTRL+Y to activate and deactivate read out loud
SHIFT+CTRL+V Read this page only
SHIFT+CTRL+ Read to end of document
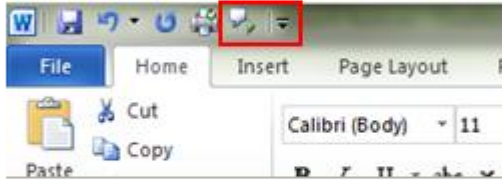
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Microsoft's Speak is a built-in feature of Word, Outlook, PowerPoint, and OneNote

Add Speak to the Quick Access Toolbar

You can add the Speak command to your Quick Access Toolbar by doing the following:

1. Next to the Quick Access Toolbar, click **Customize Quick Access Toolbar.**

2. Click **More Commands.**

3. In the **Choose commands from** list, select **All Commands.**

4. Scroll down to the **Speak** command, select it, and then click **Add.**

5. Click **OK.**

6. When you want to use the text-to-speech command, click the icon on the Quick Access Toolbar.

To use the text-to-speech (TTS), select the text you want to listen to, and then click the button on the toolbar. Ctrl+A is keyboard shortcut to select everything.

Resources and Tips

Auditory learners may appreciate listening to course content, rather than reading text, especially a lecture recorded by a professor. The audio lecture allows the learner to listen to tone of voice, pitch and other nuances. Of course, recorded audio lectures and text-to-speech works well for hearing impaired students too!

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Fifteen Best Practices and Practical Examples to Implement the Principles of UDL and Improve Course Accessibility

With an understanding of UDL and some of the assistive technologies, next we will look at fifteen practical examples to implement some UDL principles and increase course accessibility in Blackboard (Bb) Learn. Faculty should consider implementing many of these examples routinely when creating course content, not wait until a specific need arises.

PROVIDE A DIRECT LINK TO Bb LEARN

1

Consider bypassing the college's web site with a direct link for students to Bb Learn: http://bb.grcc.edu. The direct link may be provided in your syllabus under Learning Resources, for example. See the college's syllabus template: grcc.edu/syllabus

It may also be a good idea to provide a direct link in a Welcome announcement (that is also sent to students' email).

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PROVIDE CONTENT IN VARIOUS FILE FORMATS

2

Course content, including assignments, syllabus, course plan, rubrics, etc. should be available in multiple file formats. Multiple file formats help ensure all students will be able to access the information with their respective technologies. Content that work best is HTML, as it does not require additional software to view and is easily navigated by a screen reader. In the screen capture below, I copy / pasted the syllabus from MS Word, into the Bb text box editor. You may also consider providing content in MS Word, Rich Text Format, and properly structured PDF files.

HTML

Besides multiple file formats, also consider copying / pasting the information directly into the visual text box editor (VTBE) in Blackboard (Bb) Learn, which is the HTML version.

Note: Bold, italics and formatting are recognized in JAWS by default. The screen reader lets the user know when, for example, font style has changed. This is true in HTML, Word, PowerPoint, etc. The user can turn off the setting in JAWS so that every bold, italics and formatting change is not alerted to the user.

Multiple file formats.

Syllabus

Attached Files: 📄 syllabus.pdf (441.616 KB)
📄 syllabus.docx (441.616 KB)

Click the Syllabus pdf file above for a printable file.

CO 252 - Advanced Photoshop

January 6 - April 23, 2012

Cheryl Kautz, Instructor
Computer Applications
Grand Rapids Community College
Email: ckautz@grcc.edu
Main Office Phone: 234-3670
Bb Collaborate (video, voice, application sharing) and Bb IM Virtual Office hours: see Staff Information in Bb

Welcome to Advanced Photoshop! This course builds on the foundations you obtained in the CO 152 course.   This is a "hands-on" course where you will be expected to read the textbooks, complete the projects each week, complete a Midterm presentation, and a Final Project which is a culmination of the learned skills. The projects can be completed using the computers in class or the lab, or a computer of your own with Photoshop CS6 installed. Click the Resources link in Blackboard for information on discounted software at JourneyEd. An enormous amount of resources are available to help you learn throughout the course, including dozens of videos and pdf Help files I created. Although you will have a considerable amount of class time to work on the assigned projects, **plan to spend additional time outside class to complete the work.** For every hour in-class, expect to spend at least two hours outside of class.

COURSE DESCRIPTION

This course builds on existing Photoshop skills, follows steps a designer would take to complete real-world projects, and explores the more advanced production techniques including: workflow automation; color manipulation with the Curves adjustment utility; advanced compositing; blending techniques; recognize the differences of CMYK and RGB color models; understand and manipulate resolution for the web and for print; create a Photoshop Web page mock up with optimized graphics, navigation buttons, custom icons, animation, slicing, and layout elements with precision; tricks, techniques, and alternative methods to create eye-catching photos; learn to clone effectively and strategically; advanced techniques to create interesting type; and learn how to use Smart Objects to save time and apply non-destructive transformations and filters. This course is designed for students studying digital graphics communication and wanting to use the latest Photoshop special effects to create professional quality designs and images for students' portfolios. Prerequisite: Grade of C- or better in CO152 or equivalent.

LEARNING OUTCOMES

1. Be able to create non-destructive adjustment layers, work with layer masks, scale images, create a clipping mask, create and edit layer styles.
2. Know how to copy, paste, and export vector artwork from Illustrator to Photoshop in various formats, create various layer styles and create a Stamp Visible layer to select artwork.
3. Analyze, touch up, and enhance images with blend modes, cloning tools, adjustment layers and be able to use channels as
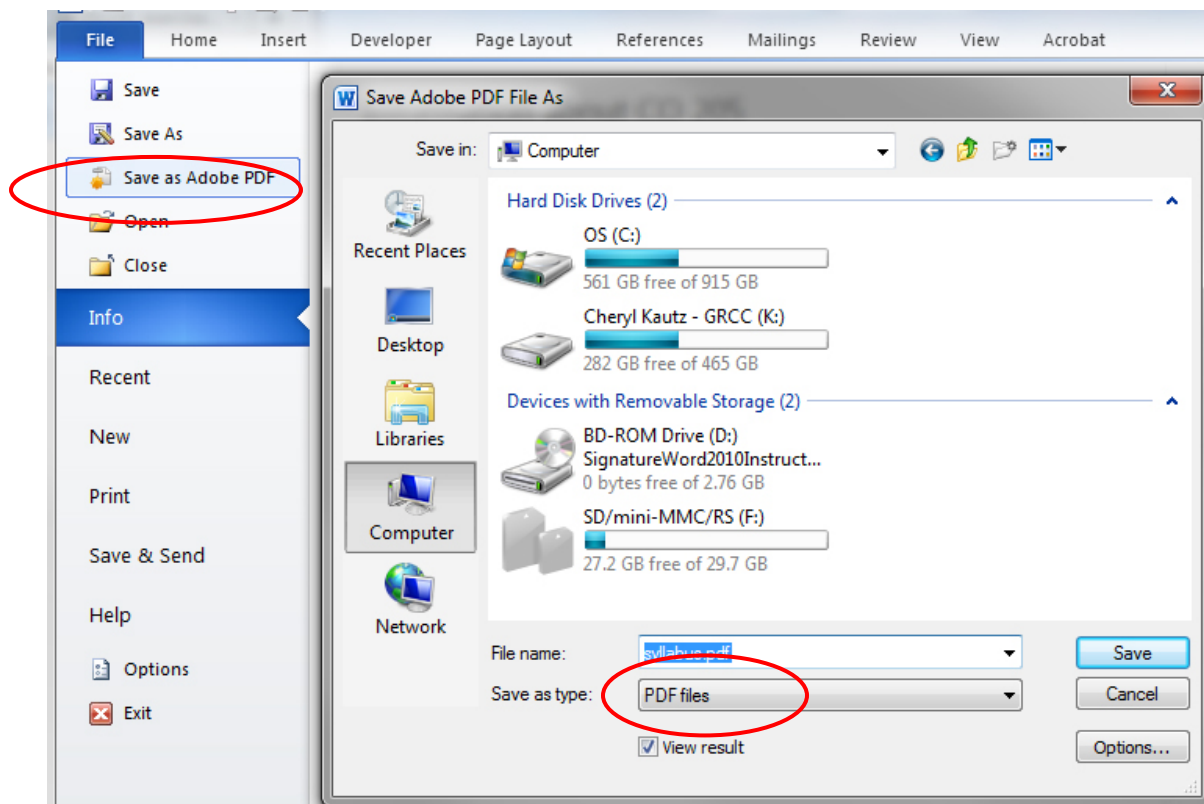
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PDF

To convert a Word document or PowerPoint presentation into a PDF, complete the following:

1. Click *File* on the Ribbon to open Backstage view.
2. Next, click *Save as Adobe PDF* to display the *Save Adobe PDF File As* dialog box. See screen capture below.
3. Click *Options* and then click to add a check mark to the two boxes: *Create bookmarks using* and *Document structure tags for accessibility*. This option is available on PCs only. These features help to ensure your document will be read properly in a screen reader.
4. Enter a descriptive file name (see page 24 about descriptive file names) and then choose *Save*.

Note: if you do not see *Save as Adobe PDF* in step 2 above, choose *Save As* instead. Next, in the *Save As* dialog box, choose *PDF* from the *Save as type* drop down menu.

For formatting tips, accessible syllabus templates and more, navigate to the following site: http://teach.ucf.edu/resources/document-formatting-guidelines/

When scanning documents to create PDFs, be sure to scan as searchable text, not an image, so that it is accessible with a screen reader. Learn more at w3.org:
http://www.w3.org/WAI/GL/WCAG20-TECHS/PDF7.html

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STRUCTURE PAGES WITH HEADINGS AND LISTS FOR EASY READABILITY

3

HTML, Word, PDF documents, and PowerPoint presentations are easy for everyone to locate content when the pages are structured with headings and lists. Well-structured documents also work well in screen readers. Visually impaired students can use shortcut keys to quickly navigate to headings (see page 14).

HTML

As mentioned in example two on the previous pages, HTML content is the most accessible type of online content as it does not require additional software to view and is easily navigated by screen readers. Faculty should use HTML content whenever possible. When creating HTML content, there are a few things you should know about headings. There are six headings, which typically display in successively smaller font sizes (see screen capture to the left). Headings are used to show the document *structure* and indicate importance of content. Headings should not be used to control the appearance of the page. For example, the title of a page should be set up as a heading 1; not 18 pt., bold font. The correct heading 1 indicates it is the title of the document. A screen reader will recognize a heading and how it fits in the structure of a document. A screen reader will not recognize the 18pt, bold font by itself as the title of the page.

Reserved for Bb CMS

Heading 1

Heading 2

Heading 3

Headings for faculty to use.

Heading 4

Heading 5

Heading 6

In addition, headings 1 – 3 (H1 – H3) in Bb SP9 are reserved by the Blackboard Learn Course Management System. Headings, titles and navigation in the Bb Course Management System use H1, H2 and H3. Faculty should create course content with H4, H5, and H6 to show document structure.

Heading 1, 2 and 3 are reserved for the Bb Course Management System as shown in this example. It is not available for faculty to create HTML content in the VTBE.
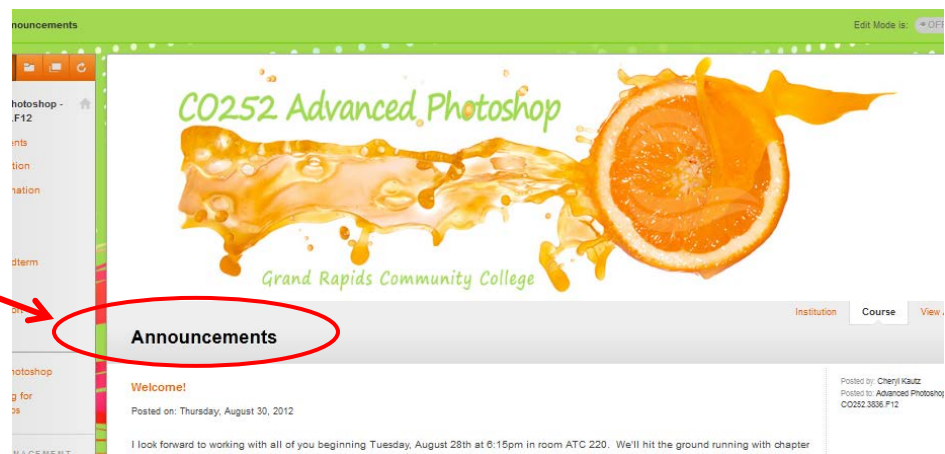
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Below is a Blackboard Visual Text Box Editor (Bb VTBE) containing a lengthy HTML syllabus. The syllabus is structured using the 4, 5, and 6 headings; the headings available for faculty to create HTML course content in Blackboard. H4 indicates the most important part of the document and is therefore used for the title. H5 indicates subheadings including Learning Outcomes, Materials, and so forth. H6 is to indicate third level headings.
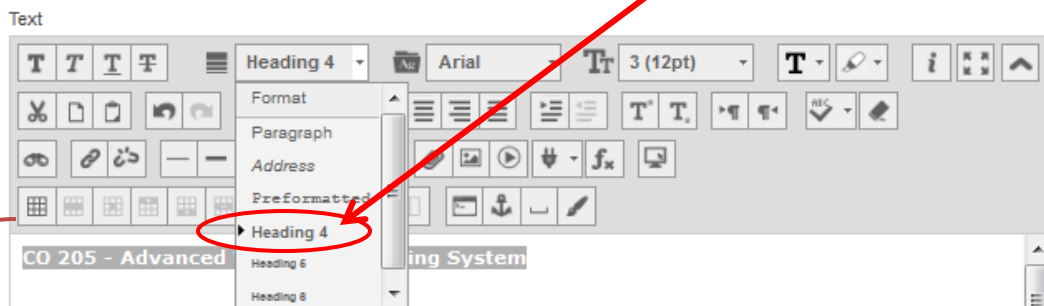
Heading 4 (may only show Heading) is used to indicate the title of the syllabus, "CO205 Advanced Operating System"

Blackboard Visual Text Box Editor (Bb VTBE)

This is the HTML version of the course content

Heading 5 is used for the subheadings.

Lists (numbers or bullets) improve readability for all learners.

Note: as you can see on the previous page and here; H4, 5 and 6 are smaller sizes and may be difficult for some students to read. After the headings are marked throughout the page, you may go back and change the font size, style and color without affecting another student's ability to navigate with a screen reader.

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JAWS screen reader navigates easily in well-structured documents

When a page is well structured, documents are easy to navigate in JAWS screen reader. The student uses shortcut keys to bring up the Heading List (see JAWS screen capture below). With arrow keys, the user can then choose which part of the syllabus to hear.

Heading List

CO 205 - Advanced Windows Operating System: 4
Learning Outcomes: 5
Materials: 5
Office Hours: 5
Evaluation: 5
Course Policies: 5
Attendance:6
Academic Integrity: 6
Learning Resources: 5

Move To Heading

Cancel

Headings 4, 5 and 6 are identified in the screen reader, indicate importance in the document structure, and allow the student to navigate to the desired section.

Sort Headings

◉ In Tab Order

◯ Alphabetically

Display

◉ All Headings   ◯ Level4 Headings

◯ Level1 Headings   ◯ Level5 Headings

◯ Level2 Headings   ◯ Level6 Headings

◯ Level3 Headings

In a poorly structured document, with missing or no headings, the student must listen to the entire document to find the desired information.

Resources and Tips

To see additional JAWS Heading List dialog box examples, visit http://ckautz.org/udl/headings.html
The examples also show the JAWS heading list for headings 1, 2 and 3 in the Bb Course Managements System.

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Word documents

As already mentioned on page 10, documents should be made available in various file formats. The syllabus in the previous example may also be created using Word, instead of typed into the Bb VTBE. After the Word file is created, if desired, it can also easily be converted into a PDF file (see page 11). Use the Styles gallery in Word to create the page structure. Below, Heading 1 is used for the title of the document.

Word Styles gallery
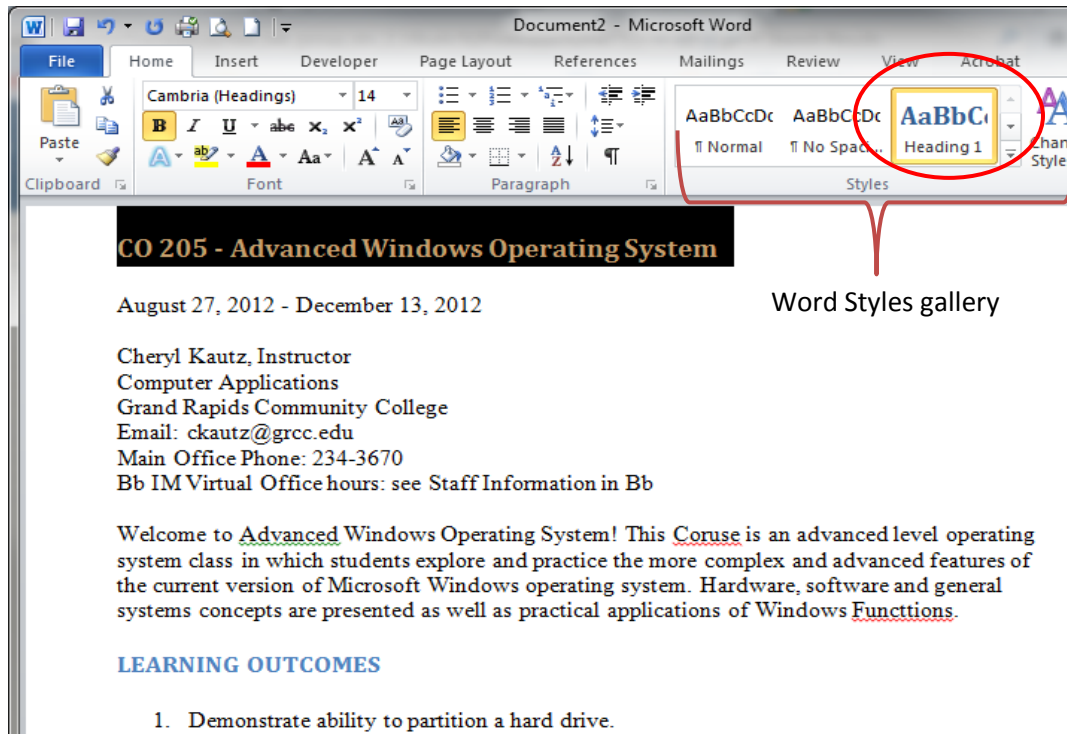
The default Word headings may be customized to your own preference. After you have created the heading style you prefer (size, font, color), update the changes in the Styles gallery. In the example below, right-click on *Heading 1* in the Styles gallery, then choose *Update Heading to Match Selection*. The new style will affect the current document only. If you want the new style to affect all future documents, instead choose *Modify* from the shortcut menu. Next, choose the option *New documents based on this template.*
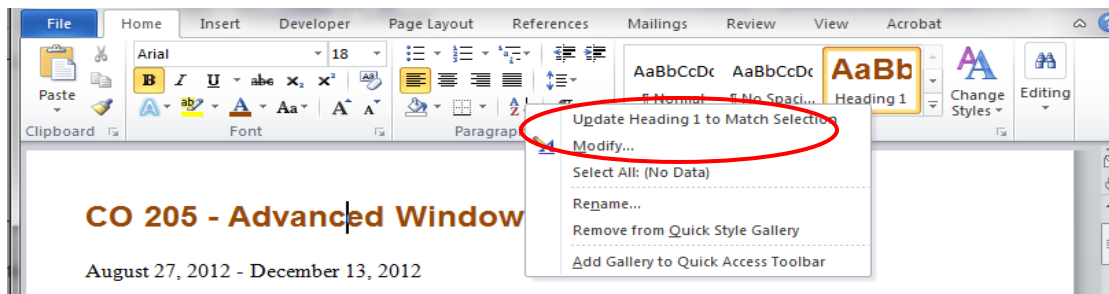
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Important note

If you plan to copy and paste the text from your Word document into a Blackboard Visual Text Box Editor (VTBE), you should *not* use Headings 1, 2 or 3 when creating the document in Word. As mentioned on page 12, these headings are reserved for the Blackboard Course Management System. Use Word's lower-level headings, such as Heading 4, 5 and 6 instead.

What if I do not see Word Headings 4, 5 or 6 in the Word Styles gallery? When Styles are not often used, they may not appear in the Styles gallery and have to be "turned on." To turn on the availability of the lower-level Headings in Word, complete the following:

1. Click the *Styles* dialog box launcher (see below).
2. Next, click the *Manage Styles* button.
3. In the *Manage Styles* dialog box, click the *Recommended* tab.
4. Click to select the Styles that you want to make available in the *Styles* gallery. You may press and hold the *Ctrl* key to select more than one.
5. After the desired *Styles* are selected, click the *Show* button. Finally, click *OK*.
6. The Styles should now appear in the *Styles* group, on the *Home* tab.
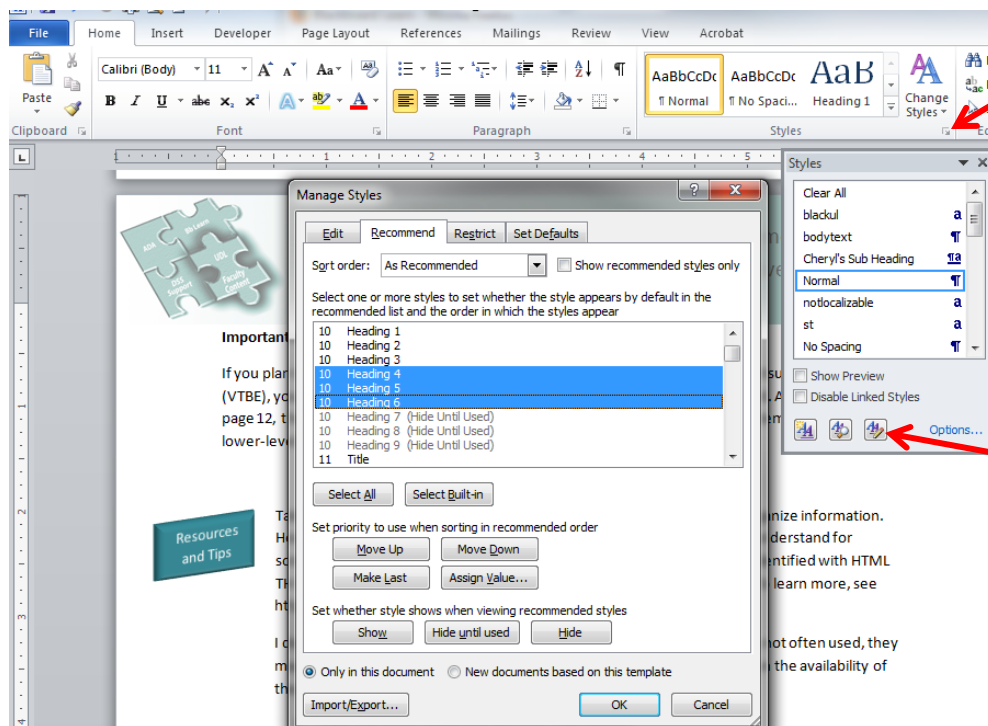
Styles dialog box launcher

Manage Styles button

Tables in Blackboard are another way to structure content, display and organize information. However, tables with more than five rows or columns may be difficult to understand for someone using a screen reader. Also, column or row headings should be identified with HTML TH tags and the summary attribute should be used to describe the table. To learn more, see http://ckautz.org/udl/tables.html

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USE HYPERLINKS SO THAT CONTENT CAN BE EASILY ACCESSED

4

The Uniform Resource Locator (URL, the Web site address) should be a clickable link which allows all users, including those using screen readers, to easily access information.

HTML

Clickable links can be easily created for course content that is provided as HTML in the Bb VTBE.

1. In Blackboard Learn, Build Content Item or enter Edit mode.
2. In the Bb VTBE below, select the text that will be a clickable hyperlink. Below the http://www.grcc.edu/policies is selected.
3. If necessary, click the *Show More / Show Less* button located in the upper-right of the text box editor.
4. Click the *Insert/Edit Link* button.
5. At the *Insert/Edit Link* dialog box, type the URL in the *Link Path* text box.
6. From the *Target* drop down menu, choose *Open in New Window (_blank)*. **It is important that the file is NOT opened inside of the Bb frame as it may not be accessible in a screen reader**.
7. Click the *Insert* button.

Selected text that will be a clickable link

URL in the *Link Path* text box

Be sure to open Web page in new window for accessibility

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Word documents

1. When a Web site address is typed in Word, it will become a clickable hyperlink after the space bar is pressed. If it does not, the hyperlink can be created manually. Continue with step 2 below to manually create a clickable hyperlink in Word.

2. Select the text that will be a clickable hyperlink link. Below, the http://www.grcc.edu/policies is selected.

3. Next, click the *Insert* tab.

4. Click the *Hyperlink* button in the Links group.

5. At the *Insert Hyperlink* dialog box, click the *Existing File or Web page* button in the *Link to* group.

6. In the *Address* text box, type the URL.

7. If you plan to copy and paste the Word document into the Bb VTBE as to provide a HTML version, consider clicking the *Target Frame* button and then choose *New Window* or *Whole Page* from the drop down menu. The content will be easier to read and interpret with a screen reader outside the Blackboard frame.

8. Click *OK* to close the Insert Hyperlink dialog box.

Selected text that will be a clickable link
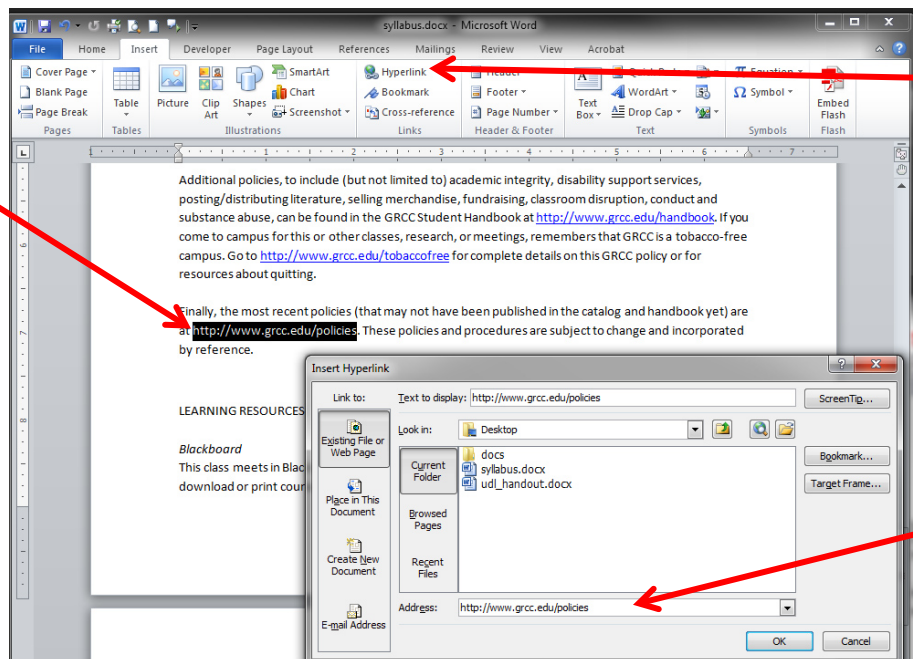
Hyperlink button

URL in the *Address* text box

9. After the link is created, place the insertion point over the link (see below), press and hold the *Ctrl* key and then click.

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USE ALTERNATIVE (ALT) TEXT FOR IMAGES

5

Images can increase comprehension and usability for most students. However, without alterative (alt) text, a visually impaired person does not know what the image is or the purpose of it. The alt text replaces an image with a text version. When the reader comes to the alt text, the screen reader conveys the meaning of the image.

Effective alt text

1. Ensure the alt text communicates the purpose of the image accurately.
2. Do not repeat the alt text in the body of the text. A visually impaired person does not want to hear the text twice; first in the alt text and then again in the body.
3. Alt text should be left empty when the graphic is purely presentational and does not add meaning to the body of the text (e.g. picture bullets in a list or a picture border around text).
4. If the graphic is important to comprehension, do not insert it into the background. You cannot create alt text for a background image because a screen reader cannot read it. If a screen reader cannot read it, the visually impaired student will not comprehend the importance of the graphic.

Add alt text to an image inserted into the Blackboard visual text box editor (VTBE)

1. In the *Edit Item* window, click the *Insert / Edit Image* button. See next page.
2. After clicking the *Insert/Edit Image* button, the *Insert/Edit* window opens.
3. Within the *Insert/Edit Image* window, the alternative text is entered into the *Image Description* box. In the example on the next page, the alt text describes the image.

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After the image is added, a screen reader will now communicate to the visually impaired student that the image is a "Picture of the required textbook" as that is what was entered for the alt text.

Insert/Edit image button

HTML code view

Image Description text box is where the alt text is entered.

You may also enter text in the *Title* text box for other students not visually impaired. The title appears as a screen tip when the mouse hovers over it.

The *Image Description* entered above, appears as alt text in the HTML code.

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Add Alt text to an image in PowerPoint, Word or Excel
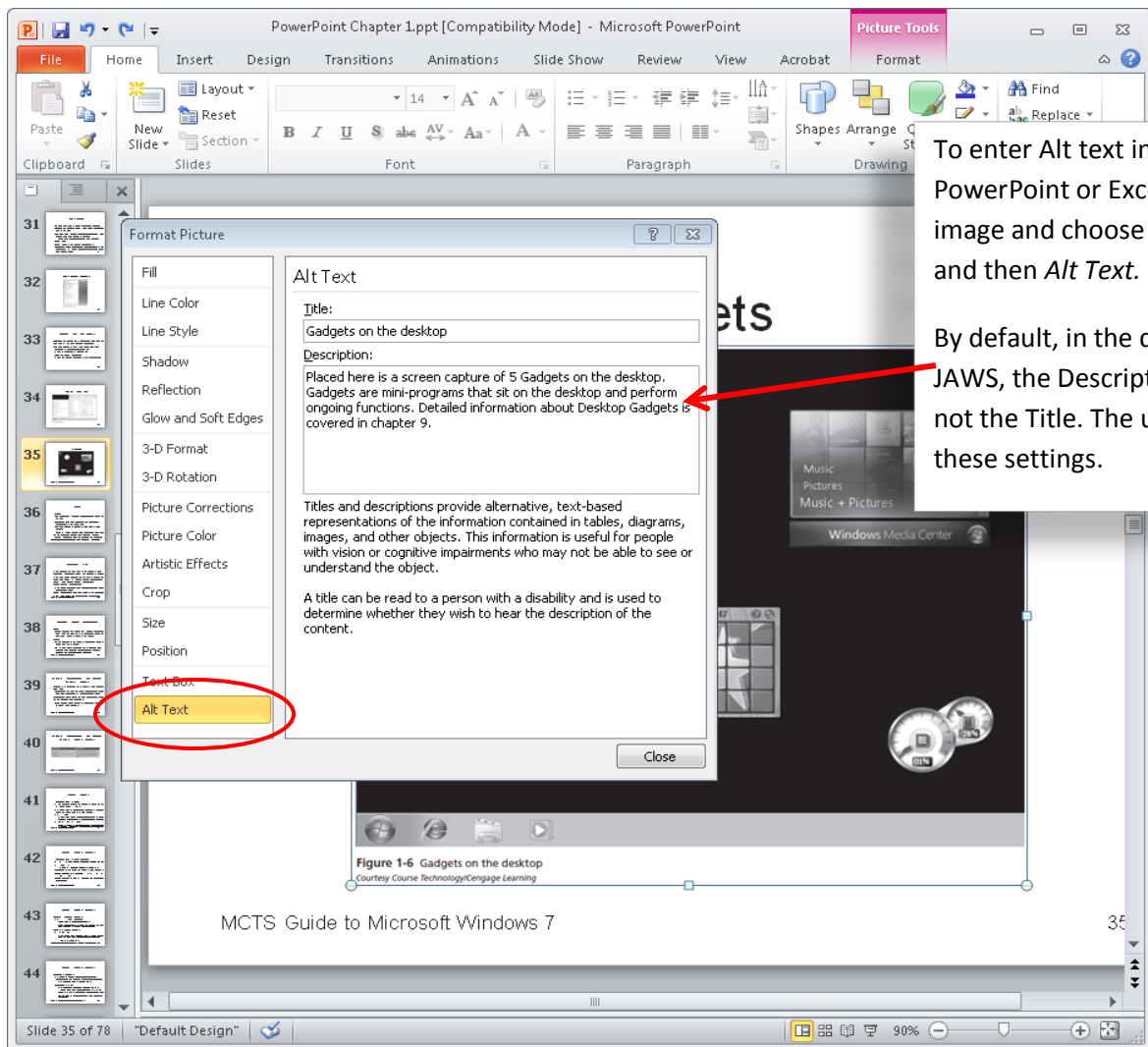
To enter Alt text in Word, PowerPoint or Excel, right-click the image and choose *Format Picture* and then *Alt Text.*

By default, in the demo version of JAWS, the Description text is read, not the Title. The user can change these settings.

Note: footers should be removed. This PowerPoint has 78 slides. If the footer is not removed, the screen reader would read it 78 times. Also, consider replacing the footer with the word "Next." When listening in a screen reader, this makes it clear the student should go to the next slide. Footers are easy to change in PowerPoint. All slides can be revised in one place. Click *Insert* on the Ribbon and then the *Header & Footer* button.

Listen to how the above sounds in the JAWS screen reader software: first you will hear the Alt Text shown above on slide 35, then the footer replaced with the word "Next," and finally you will hear the text on slide 36: http://ckautz.org/udl/screen_reader_example.mp3

Listen to a more natural voice sound by RealSpeak
http://enterprisecontent.nuance.com/vocalizer5-network-demo/index.html

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Use Word Check Accessibility tool

Although Word's Check Accessibility tool is not a substitute for proof reading your documents, the tool can help to identify issues. To check your document, complete the following:

1. Click *File* on the Ribbon to open Backstage view.
2. If necessary, click the *Info* tab to display the Info gallery.
3. Click the *Check for Issues* button and then choose *Check Accessibility* from the menu.
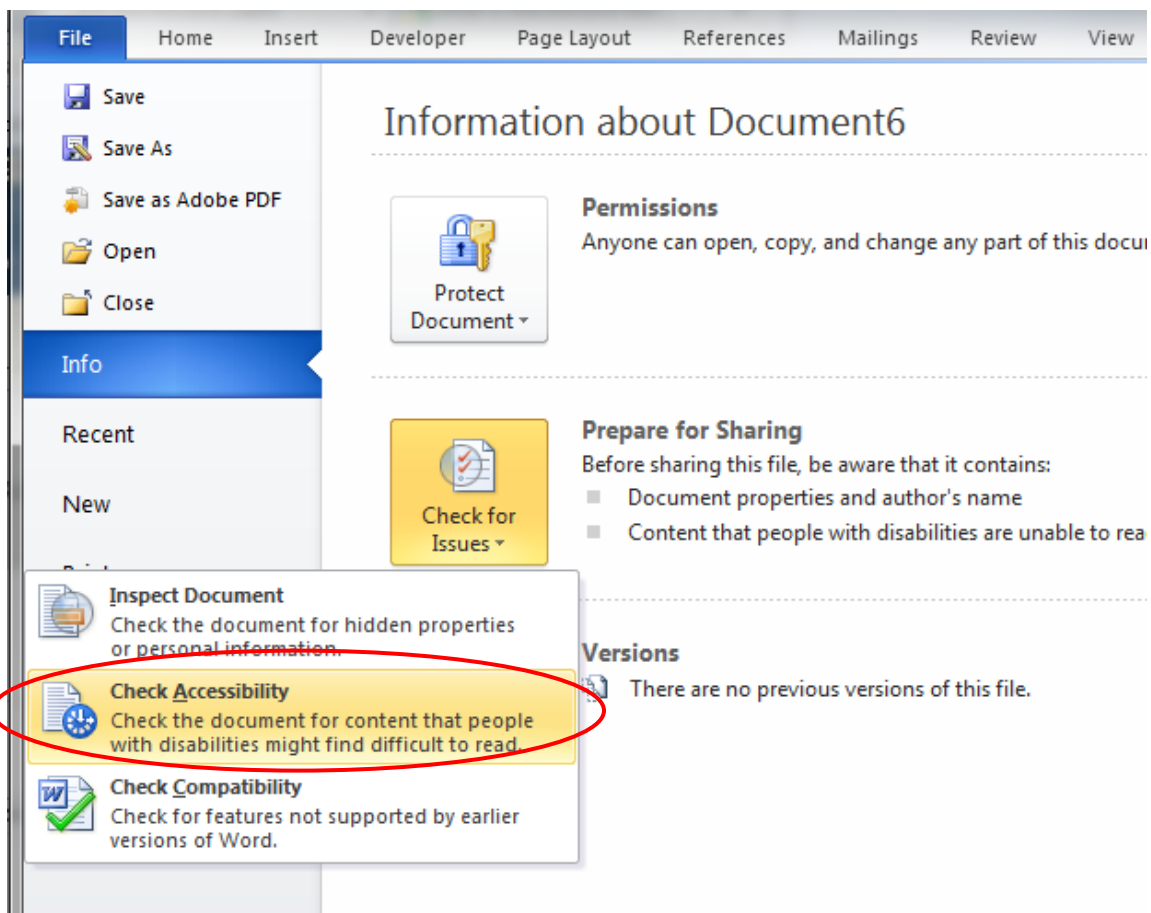
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After I checked the syllabus document for accessibility, I received the error "Missing Alt Text" as shown below. Additional Information, located on the lower-right of the window, provides directions to correct the error.
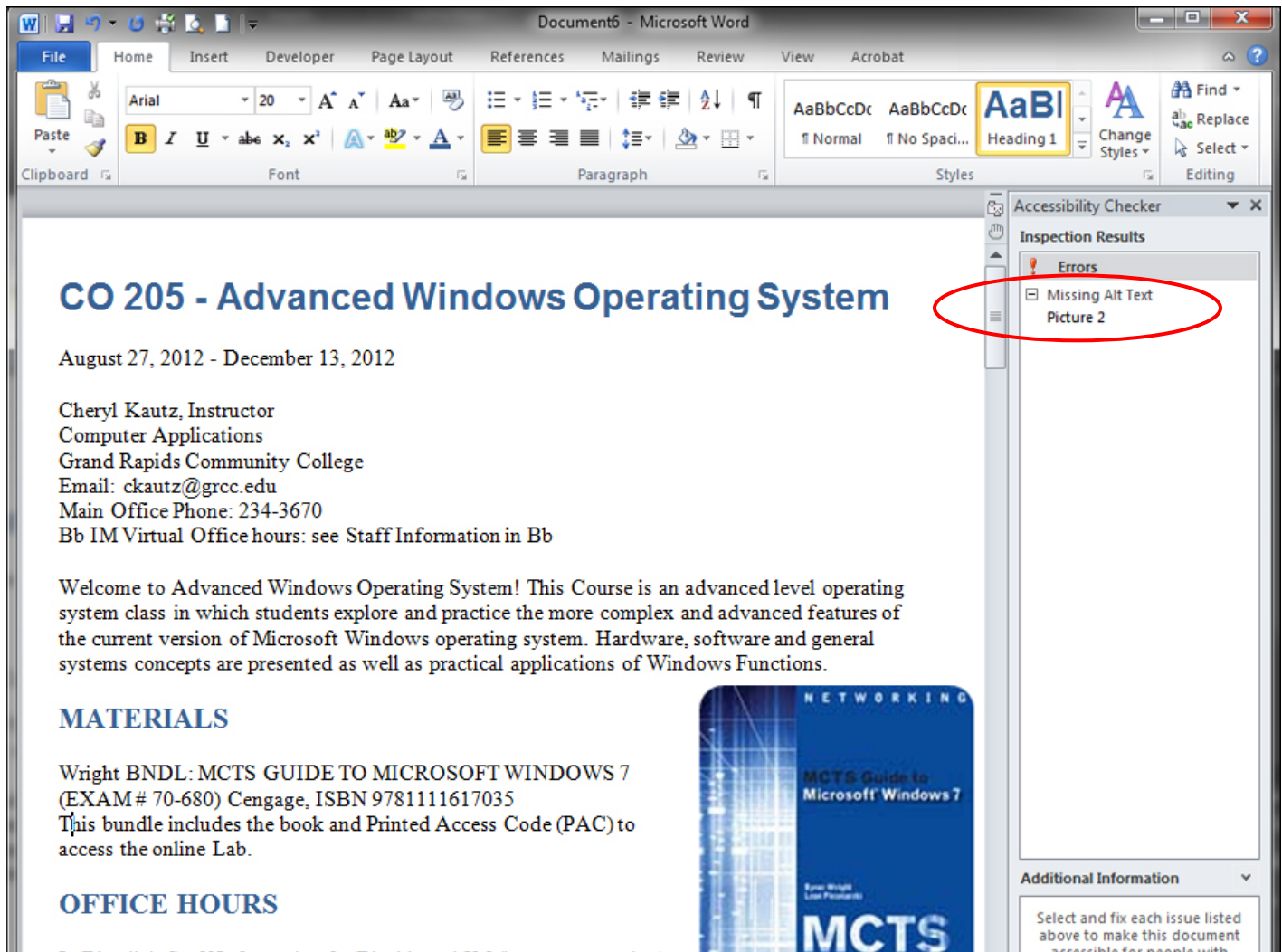
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LABEL FILES CLEARLY

6

Files should be labeled clearly so that it has meaning when interpreted with a screen reader. For example, use syllabus.docx verses doc1.docx. See below for additional examples.

Homework: Project 1

Attached Files: homework-project1-instructions.docx (315.894 KB)
homework-project1-instructions.pdf (315.894 KB)

Click a *homework-project1-instructions* link above to download and print the instructio
Project 1. When completed with the project, click the
Homework: Project 1 link above to submit your zipped file to Bb for grading. If you ne
zipping and submitting files to Bb, see *Learn how to zip and submit your Projects to .*
week 1.

Help Desk: Related resources for Project 1

Attached Files: PowerPoint that summarizes key concepts.ppt (2.845 MB)
help-resources.pdf (315.894 KB)   help-resources.docx (3.769 MB)

SET UP FILES TO OPEN IN A NEW WINDOW

7

When inserting content into Bb Learn, select the option *Yes* to *Open in New Window*. Files opened in a new window are easier to navigate in a screen reader, then if opened inside the Bb frame.

Week 2 September 3 - September 9

Build Content | Assessments | Tools | Publisher Content

Create
Item
File
Audio
Image
Video
Web Link
Learning Module
Lesson Plan
Syllabus
Course Link
Content Package (SCORM)

New Page
Content Folder
Module Page
Blank Page

Mashups
Flickr Photo
SlideShare Presentation
YouTube Video
NBC Content
Wimba Voice Authoring

Create File

*Use the **File** content type to add a file that can be selected and viewed as a page within the cou Also, a collection of files or an entire lesson, including cascading style sheets (CSS), can be dev viewed in order. More Help*

✱ *Indicates a required field.*

1. Select File

*Select a local file by clicking **Browse My Computer** or one from within Course Files by cli the text to appear in the list of content. Click **No** to display the file within the Course environ page heading.*

✱ Find File | Browse My Computer | Browse Content Collection

Selected File | File Name | **cs6 notes.docx**
Select a Different File

✱ Name | syllabus.pdf

Color of Name | ◼ Black

Open in New Window | ● Yes ○ No

Add alignment to content | ○ Yes ● No

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RECORD VIDEO / AUDIO LECTURES IN VARIOUS FILE FORMATS

8

Faculty should record lectures to give students the opportunity to review material as many times as necessary. It is also a good idea to provide the lectures in multiple file formats as this will help ensure all students will be able to access the information with their respective technologies (*.swf, *.mp4, etc.). Some of the technologies used to record lectures are listed below.

- Camtasia *.MP4
  - *Camtasia Studio* records your screen and voice, allows you to add music, photos, video, clickable links, etc.
    Learn more: http://techsmith.com/camtasia
    Free to use for 30 days: http://www.techsmith.com/download/camtasia/default.asp
    - The videos may be saved using Flash or only as a mp4 file. Consider saving in both formats.
  - *Camtasia Relay* allows you to share your knowledge quickly and easily. I'll use this software to record lectures in the classroom. It is available in all multimedia classrooms at GRCC.
    Learn more:
    - http://www.techsmith.com/camtasia-relay.html
    - http://cms.grcc.edu/relay
    - tip sheet: https://bb.grcc.edu/bbcswebdav/institution/Distance%20Learning%20and%20Instructional%20Technologies/Training/Tip%20Sheets/Relay/UsingCamtasiaRelay.pdf

    Download free: http://relay.grcc.edu

- Jing *.SWF
  Record up to 5 minutes for free
  http://techsmith.com/jing.html
- Use existing YouTube video or upload your own video to YouTube and link or embed in Bb.
  YouTube Mashups tutorial video: http://www.youtube.com/watch?v=3hdmm-6GG9U
  (provided by Tim Koets).
- Screencast-O-Matic
  Allows faculty and students to easily record videos without installing any software onto your computer. Just click the *Start Recording* button!
  http://screencast-o-matic.com/

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INCLUDE CLOSED CAPTIONING AND / OR TRANSCRIPTS AND AUDIO DESCRIPTIONS

9

For students that may be in a noisy environment, do not have a head phone or sound card, have difficulty understanding the video, or are hearing impaired, include Closed Captioning (CC) and / or transcripts with your videos. Audio Descriptions should also be considered for students with visual impairment. Audio descriptions can be helpful to describe important content not available through the audio alone.

Select textbook publishers that provide accessible technologies

Whenever possible select accessible technology for your courses. Textbook publishers sometimes provide videos with CC, transcripts and multiple file formats. Below is a screen capture from the Total Training videos Cengage Learning provides for the Adobe courses at GRCC.
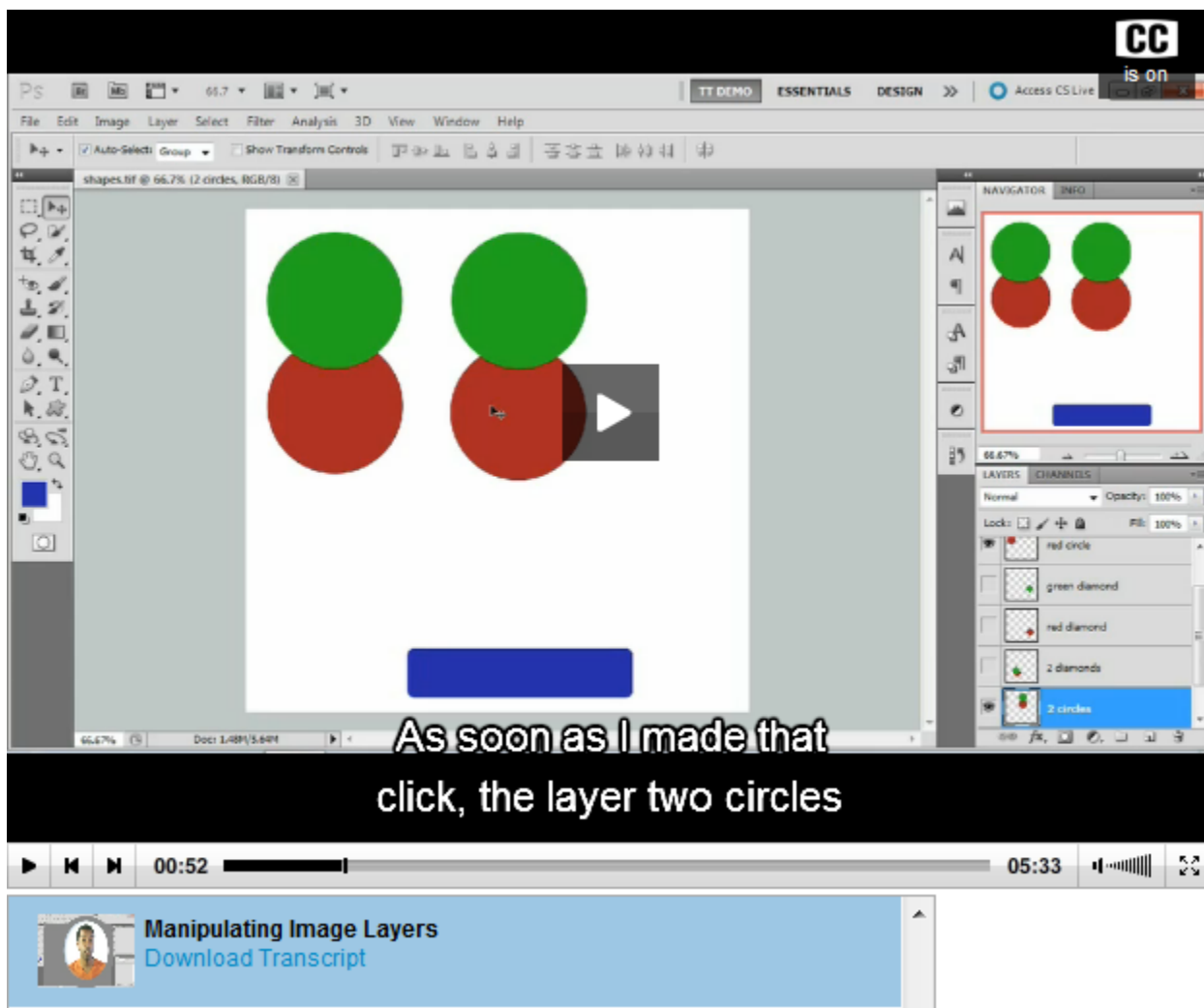
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Camtasia Studio to create Closed Captioning

Below is a screen capture of Closed Captioning being added to a video in Camtasia Studio 8. The transcript may be copied and pasted into the Captions window located in the upper left (see below). You may also try the speech to text option (circled in red below) to automatically create the captions.
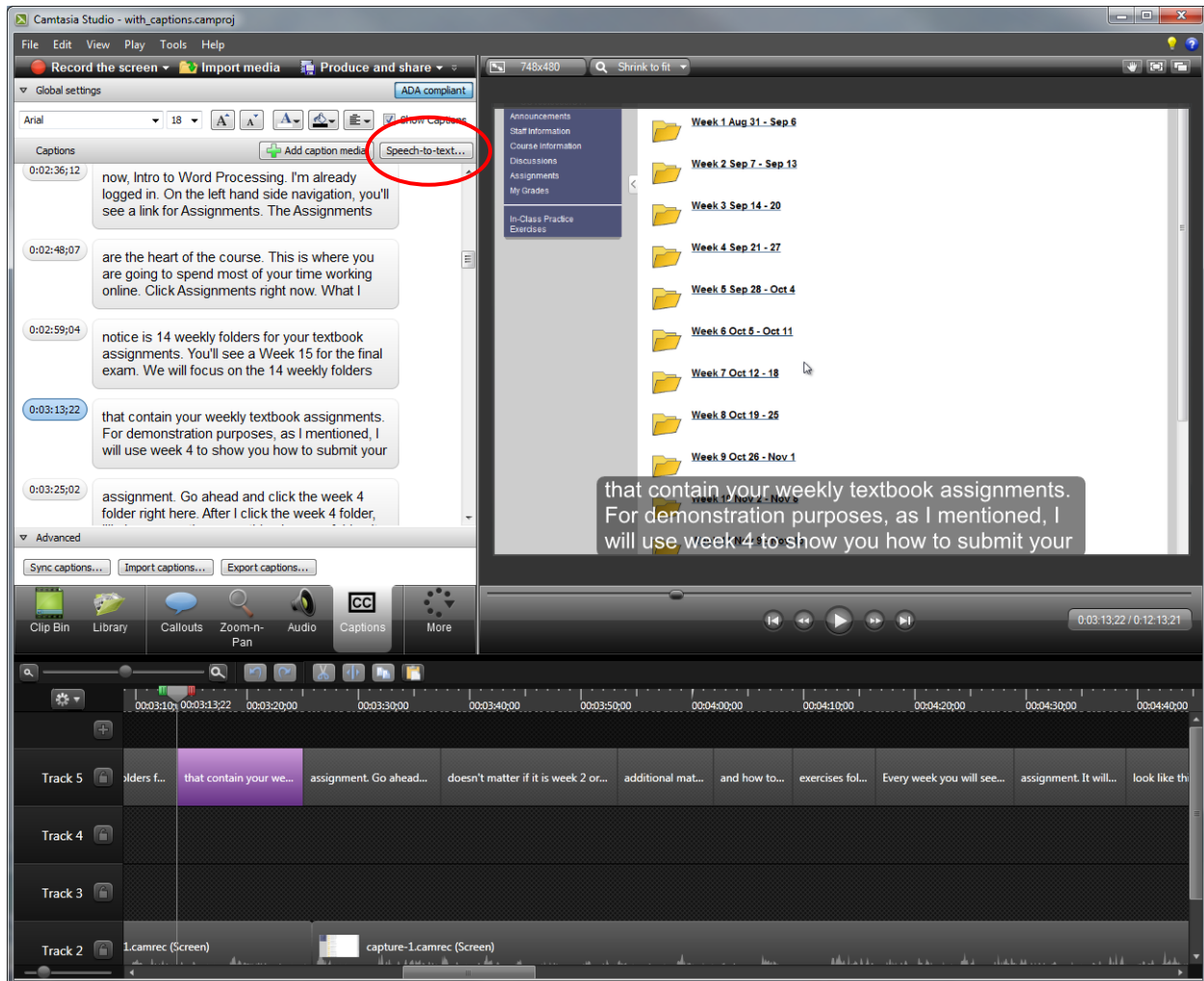
Learn about speech-to-text for Camtasia studio:
http://www.techsmith.com/tutorial-camtasia-speech-to-text.html

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YouTube to create Closed Captioning (CC)

YouTube is a resource available to create CC. YouTube creates the CC for you, which you can edit.* The following is a screen capture of a video I created using Camtasia Studio along with YouTube to create the CC.

To begin using YouTube to create CC, follow these steps:

CC added using YouTube
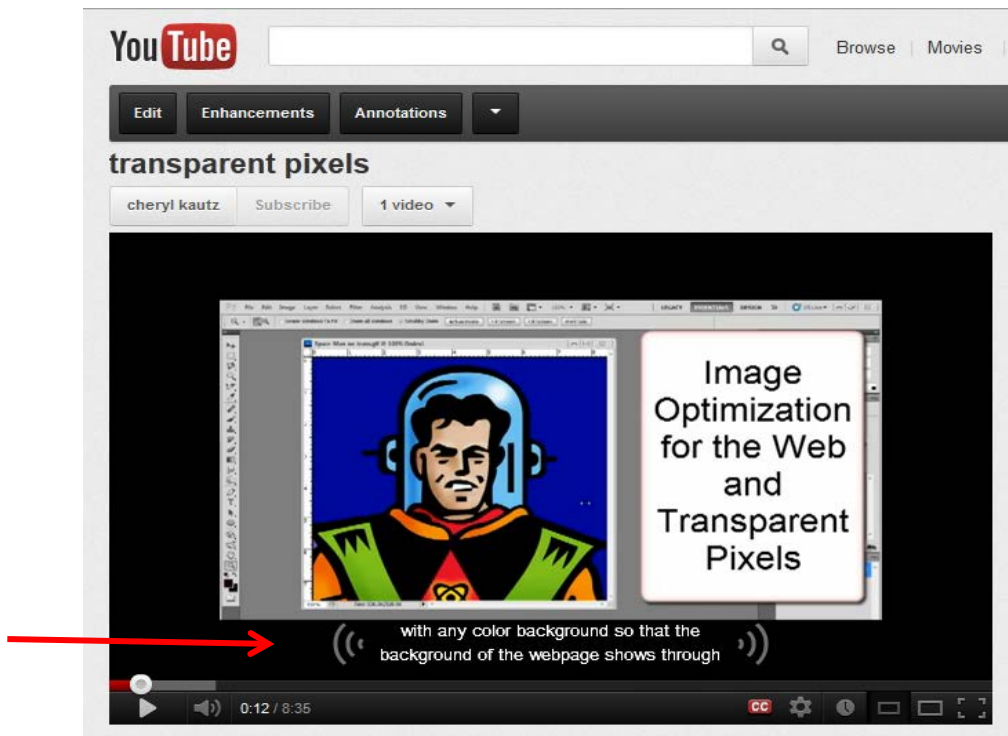
1. Navigate to www.youtube.com and click *Sign In*. If you do not already have an account, click *Create Account* instead.
2. After you have a YouTube account and have signed in, click the *Upload* link at the top of the page. You may upload videos you created with software such as Camtasia (see page 25).
3. After video is uploaded, click your name in the upper-right of the YouTube web site.
4. Next, from the drop-down menu underneath your name, click the *Video Manager* link.
5. Within the Video Manager, click the drop-down arrow next to Edit and choose *Captions*.
6. After choosing the *Captions* button from the drop-down menu, there will be a button to *Upload caption file or transcript* or you may click the *English* link (or whichever language is used) to download and edit CC that has been automatically created.
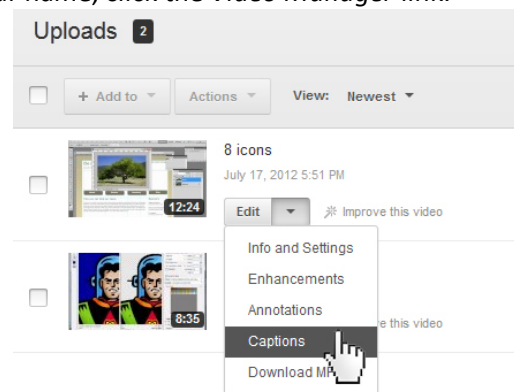
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Resources and Tips

*The automated transcript translation in YouTube may not always be that accurate. To clean up transcripts, consider a universal transcript system: http://www.universalsubtitles.org/en/ The system allows you to clean up transcriptions as a group effort, allows you to use the auto-translation tool, or complete translation yourself.

Register for a session at the Center for Teaching Excellence to learn more about adding multimedia to your course: http://cms.grcc.edu/ctecat

Contact GRCC Disability Support Services (DSS) for additional information about audio descriptions, closed captioning and transcripts: http://cms.grcc.edu/disability

GRCC currently has Camtasia Relay version 3 and is working on obtaining 4 (as of Sept. 2012). The software is used to record audio and video for your lectures in the classroom. Relay 3 includes the option for closed captioning (available in the Profile dropdown menu). Relay 4 will offer closed captioning and transcripts. Look for it in the multimedia classrooms at GRCC. You may also download it from http://relay.grcc.edu

Camtasia Studio 7.1 and 8 can also be used to record audio and video for lectures. Moreover, it allows you to add music, photos, video, clickable links, etc. Closed Captioning can be created by clicking *Tools > Captions* from the menu bar. To learn more, use the Camtasia Studio Help and do a search on "closed caption."

Web captioning overview: http://webaim.org/techniques/captions

Audio Descriptions can be created for the visually impaired student. The audio provides additional information about the video.
Learn more: http://webaim.org/techniques/captions/#ad

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KEYBOARD SHORTCUTS TO ACCESS MATERIALS

10

Students using screen readers or with limited mobility should be able to access all Bb Learn content and web page elements using a keyboard only.

Consider providing keyboard shortcuts to your students to help ensure they can access course content.

Keyboard shortcuts for navigating the Windows Operating system, documents, browsers, configurations to more easily access forms and more are available at the link below.

Resources and Tips

To share keyboard shortcuts with your students, download the pdf file here:
http://ckautz.org/udl/tips_for_students.pdf

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ORGANIZED AND CLEARLY LABELED WEEKLY CONTENT FOLDERS

11

Create weekly content folders that are organized and clearly labeled. Weekly content folders are well organized as shown below. However, the screen capture on the right for "Do" has been simplified by removing the extra text below the folder. A screen reader will be able to navigate the content more efficiently; therefore the student will locate the desired weekly content quickly.

Don't
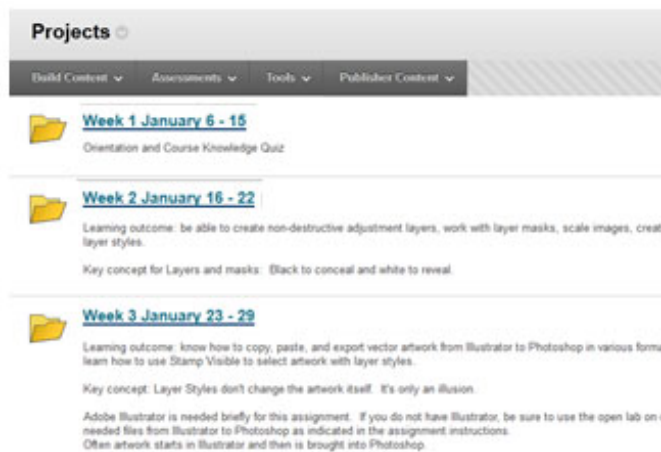
Do
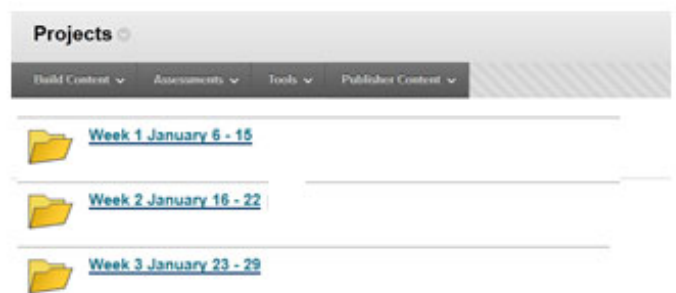
Note that the content shown in the screen captures above was created and organized with Content Folders. Content was not created and organized with Learning Modules (see below) as modules may be less accessible with screen readers.

Content in Learning Modules may be *less* accessible with screen readers.
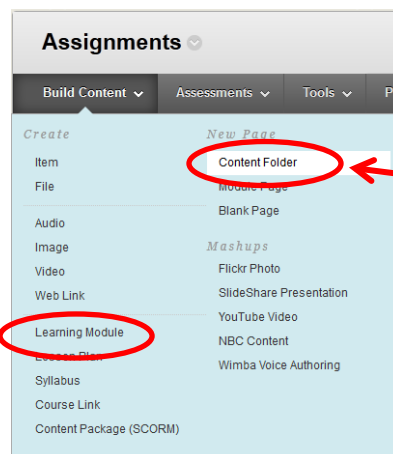
Content in Content Folders may be *more* accessible with screen readers.

Note: using Content Folders instead of Learning Modules recommendation was based on the advice from an expert on disability policy at the University of Tennessee at Chattanooga and a GRCC visually impaired student's experience trying to access Learning Modules using JAWS screen reader.

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CONSISTENT CONTENT WITHIN EACH WEEKLY FOLDER

12

Keep the content within each folder consistent every week to help with navigation and understanding for all students, including those with disabilities. In this example, the weekly Learning Outcome is always stated first, next a video lecture, then Homework, a Help Desk, and an optional Learn more folder. It does not matter if it is week 2 or 10, the weekly content is always organized the same way.

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**CONSIDER AUDIO OR VIDEO FEEDBACK INSTEAD OF WORD TRACK CHANGES**

13

Microsoft Word includes a built-in Review function (Track Changes) that can assist faculty in electronically grading student work (see below). Although this is a nice feature, it is difficult and cumbersome for a visually impaired student to listen and understand the graded feedback in a screen reader. Instead, consider asynchronous recorded audio or video feedback for some students. Not only is it better for understanding, it also promotes teaching presence in the online classroom and enhances the learning community interaction.
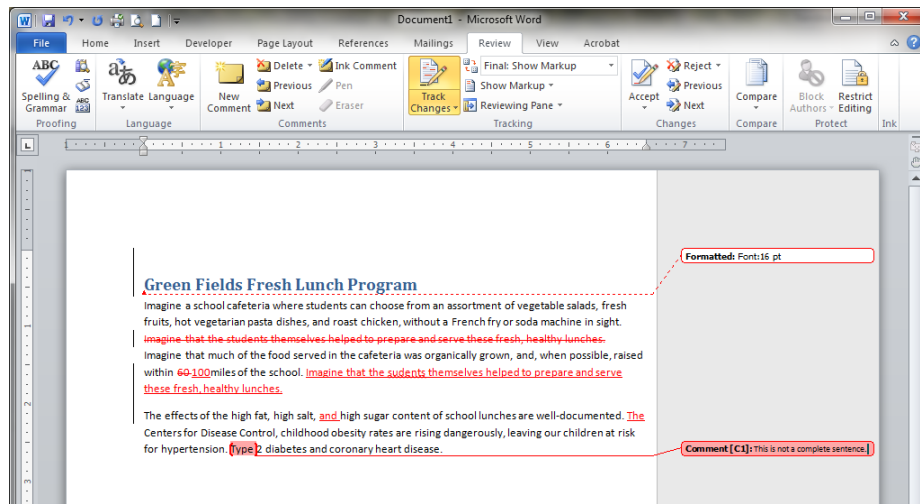
Faculty has several options to consider when incorporating audio or video feedback for students.

1. See page 25 of this handout for audio and video recording software.
2. Try http://Vocaroo.com, an easy, fast, free service to create audio recordings. There is no need to install software. All you need is a microphone. To begin, navigate to the site and click the *Click to Record* button and then the *Click here to save* link. When saving, I like to choose the MP3 option as it is a popular format and a small file size.
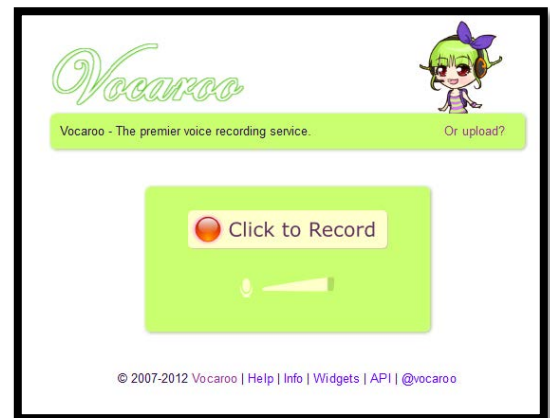
Resources and Tips

Other resources:

Audacity free audio recorder (and editor):
http://downlomania.com/audacity?gclid=CI3g-6fv6bECFQ-R7QodTE4AXA

In a Blackboard content section, click *Build Content* and then *Wimba Voice Authoring*.
Learn more: http://cms.grcc.edu/bbvoice   and   http://cms.grcc.edu/bbtipsheets

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PROVIDE MULTIPLE MEANS OF REPRESENTATIONS (TEACHING)

14

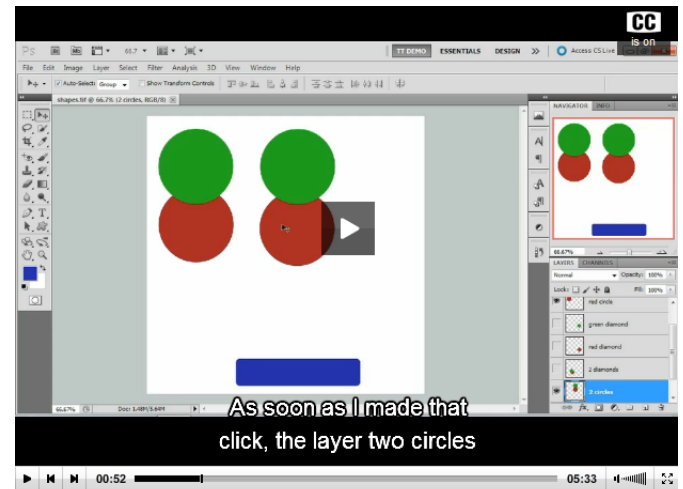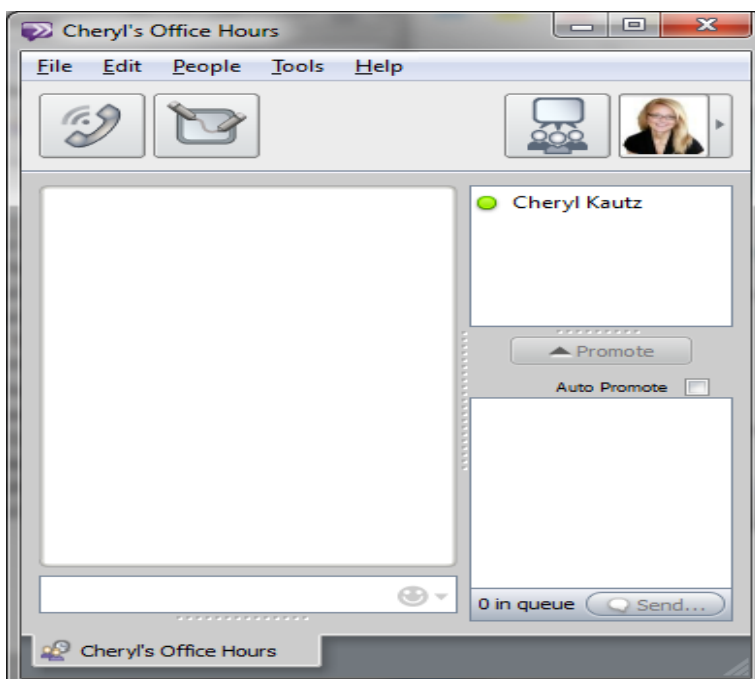Offer a variety of communication avenues. Provide synchronous and asynchronous communications.

Synchronous with Bb Collaborate
(Google hangouts is also an excellent web conferencing tool: http://hangouts.google.com)
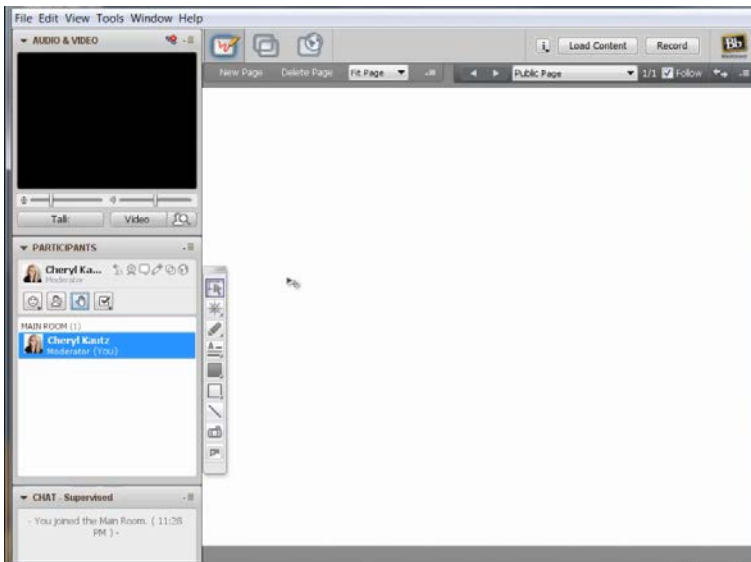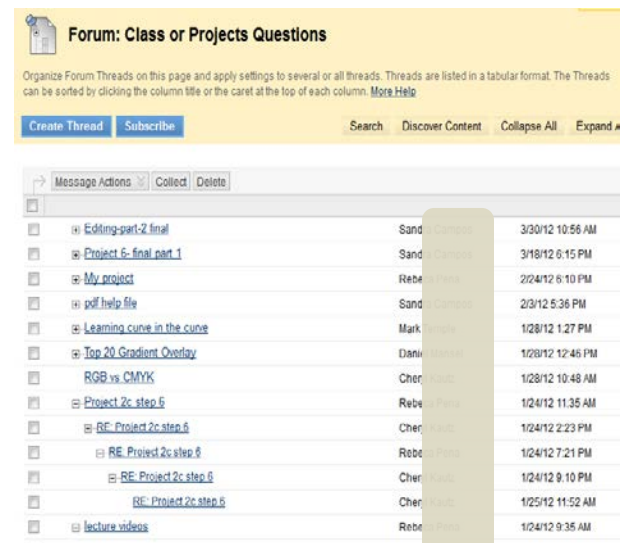
Asynchronous with audio/video lectures, transcripts and CC

Synchronous with Bb Instant Messaging

Asynchronous with Discussion Forums

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PROVIDE CLEAR EXAMPLES

15

Good examples make quality of work and expectation clear. Below is a case in point.

Blackboard interactive rubric stating project requirements:

	Points: 18	Points: 15	Points: 12	Points: 9
	Adjustment Layer). All Layers have descriptive names. • At least 2 layer masks to conceal or reveal pixels. • Similar layers organized into Groups • May have used color coding on the Layer (right-click layer, Layer Properties, Color drop-down)			
Roller buttons for navigation bar	At least 4 rollover buttons on a vertical or horizontal navigation bar. Layer styles and Layer Comps are used effectively to create 2 or more different versions of the buttons. Refer back to Asg 7 and video #7 at 18m 26s through 24m 52s in the video tutorials.*	3 buttons, with layer styles, could have used Layer Comps more effectively.	2 buttons, missing layer styles, could have used Layer Comps more effectively or Layer Comps missing.	Less than 2 buttons, missing Layer Comps or Layer styles.
Res and Height / Width	Resolution is appropriate for output: 72ppi for screen. Click Image> Image Size for resolution. See first part of ch 7 in Advanced Revealed for guidance. Height/Width is appropriate. See video #2 in the video tutorials.*			Res is not appropriate and/or a user will need to scroll horizontally on a screen resolution of 1024x768 to see all content.
Precise Layout	Guides are used to layout elements with precision. See video #3 i... least 4 ho... vertical gu...	3 or less horizontal guides were used. 3 or less vertical guides	2 or less horizontal guides were used. 2 or less vertical guides	Missing guides and/or elements not laid out with precision.
Slicing	Poin... Photosho... with at lea... slices. Ea... descriptiv... individual... and optim... file forma... images w... usin...			

Flash slideshow with examples of students' projects from previous semesters (also available in pdf).
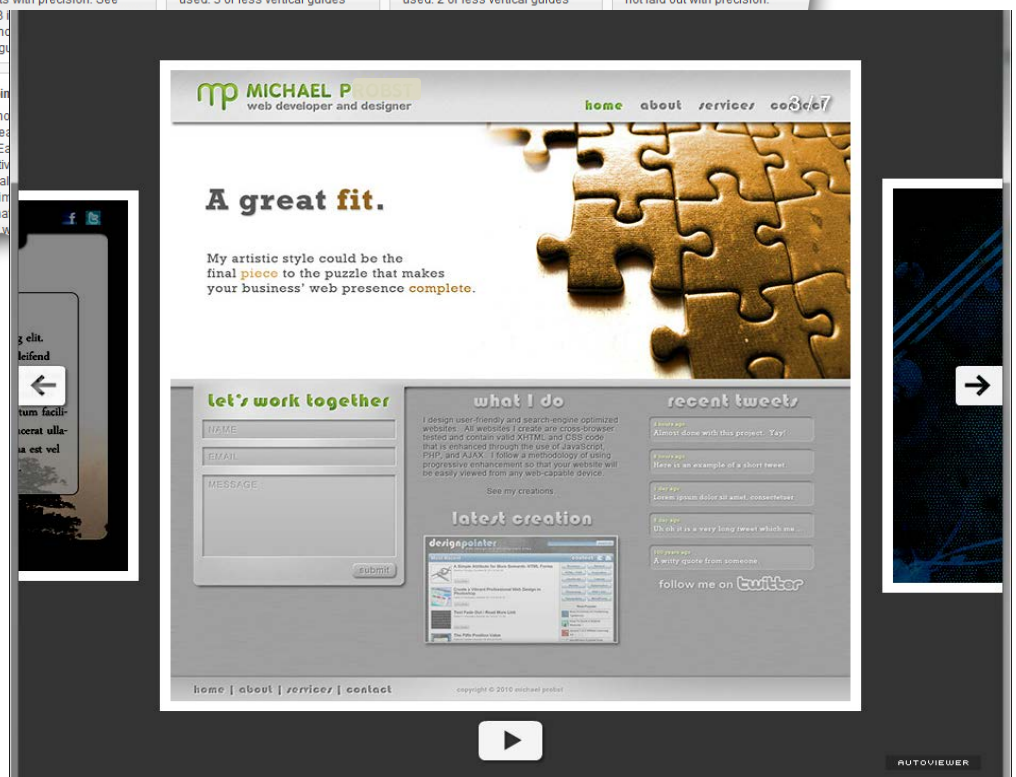
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Accessibility Checklist

To help ensure your course content is accessible to all students, complete the following checklist:

☐ Course content is available in more than one file format
(HTML is the most accessible – see page 10)

☐ Course content contains proper structure (headings and lists) for easy readability and navigability
(see page 12)

☐ Course content contains clickable hyperlinks so that students can easily access the information
(see page 17)

☐ All images (except those that are purely presentational) contain effective alternative text for the
visually impaired student to understand with a screen reader (see page 19)

☐ Optional: duplicate footers are removed (in a PowerPoint, consider replacing the footer text with
the word "Next" - see page 21)

☐ Files are labeled clearly (see page 24)

☐ Files are set up to open in a New Window (see page 24)

☐ Closed Captions / Transcripts should be provided (see page 26)

☐ Weekly Content Folders are clearly labeled and organized (Learning Modules may not be accessible
– see page 31)

☐ Content within each Content Folder is consistent every week (see page 32)

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