COURSE TITLE

Web Page Design

LENGTH

One Semester
Grades 10-12

DEPARTMENT

Business Education
Barbara O'Donnell, Supervisor

SCHOOL

Rutherford High School

DATE

Spring 2017

WEB PAGE DESIGN

I.   Introduction/Overview/Philosophy

This course is designed to introduce and enhance student knowledge of web page design. The course will include instruction in designing web pages through the use of HTML programming, JavaScript programming, and web design software. In addition, instruction in graphic animation will be covered.

This course will also include discussions of the Internet, how it originated, how it functions, as well as the advantages, disadvantages, and dangers associated with Internet use. It will also help to develop and refine students' Internet searching skills through instruction on various searching methods and Internet resources.

During the course, the problems and challenges presented to students will be assigned tasks and/or student-defined problems. Students will be required to research topics in order to develop sophisticated and informative web pages. Students will decide on the type and the function of their web sites and will be exposed to and required to use various types of web technologies such as image maps, image rollovers, linking, animation, scripting and Cascading Style Sheet layouts (CSS). Students will also be required to produce a storyboard of their pages in order to fully grasp navigation and design concepts. These assignments will result in the extensive utilization of the Internet in problem solving and information gathering.

Web Page Design is intended for all students, because it is imperative that all students build a solid understanding of using information on and designing information for the Internet in order to compete in the digital world in which they live and will contribute to in the new electronic learning environment and the larger online world. It will lay the groundwork for students to be able to use the Internet as an extraordinary source and communication vehicle of information in all their course work.

II.   Objectives

Course Outline:

I.   Internet History
- A.   Develop a timeline of historical events related to the Internet
- B.   Understand web addressing
- C.   Understand how a network operates

II.   Internet Searching
- A.   Distinguish among subject guides, search engines, and metasearch engines
- B.   Use Boolean operators
- C.   Explain how search engines, subject guides, and metasearch engines categorize and discover information (spiders and robots)
- D.   Determine reliability of information
- E.   Develop an understanding of copyright laws and proper citation for the use of copyrighted material

III.   Web Page Development
- A.   Develop a publishing plan
   1.   Develop a purpose statement
   2.   Use storyboarding techniques
   3.   Create a flow chart (site map) of their pages including all links
- B.   Understand Web architecture
   1.   Create a single page
   2.   Create a web site
   3.   Name pages correctly (index.html, habitat.html, etc.)

IV.   HTML
    A.   Uncover the page beneath the Web page (source code)
    B.   Use correct starting and ending tags
    C.   Save and view an HTML file in a web browser
    D.   Use HTML headings
    E.   Use HTML numbered and bulleted lists with attributes
    F.   Use HTML single and double spacing (break and paragraph)
    G.   Use HTML spacing techniques
    H.   Incorporate horizontal rules with attributes
    I.   Enhance pages with background colors/images (properly edited)
    J.   Add hyperlinks—to URLs, to other pages in the same web site, and internal links
    K.   Use font size, style and color
    L.   Download and insert graphics (properly edited)
    M.   Size pictures using HTML and Photoshop techniques
    N.   Organize and display information using tables

V.   Color
    A.   Understand the importance of color
    B.   Use online resources to determine color combinations
    C.   Use hexadecimal numbers in choosing color

VI.   Web Graphics
    A.   Overview of web graphics
        1.   Sources of graphics
            a)   Use of online sources
            b)   Use of digital cameras
            c)   Use of scanners
        2.   File formats
            a)   Bitmap
            b)   Vector graphics
            c)   GIF
            d)   JPEG
            e)   PNG
            f)   TIFF
    B.   Editing graphics using various software such as Adobe Photoshop and iPhoto
        1.   Resizing
        2.   Color correction
        3.   Cropping
        4.   Background transparency
        5.   Reformatting to lower bandwidth needs
    C.   Create graphics
        1.   GIF
        2.   JPEG
        3.   PNG
        4.   Vector based (Illustrator or Flash)
        5.   Background graphics

    D. Animate graphics
      1. Adobe Flash or similar program
        a) Basics
          (1) Create a movie file
          (2) Set movie properties
          (3) Enter content on the stage
          (4) Draw, select, position object on the stage
          (5) Modify and copy stroke and fill settings
          (6) Rotate, skew, scale, resize, flip and reshape objects
          (7) Understand segments and overlaps
          (8) Group and ungroup objects
        b) Create A Movie
          (1) Work with frames and keyframes
          (2) Understand and work with layers
          (3) Create and edit symbols
          (4) Modify instances
          (5) Create buttons
          (6) Understand tweening
            (a) Motion tweening
            (b) Tweening the color of an instance
            (c) Shape tweening
            (d) Tween motion along a path
         c) Enhancing a Movie
          (1) Import graphics
          (2) Insert sounds
          (3) Create, enter, edit format, and transform text
          (4) Animate text blocks
        d) Export Flash files (create swf file)
VII. Use Web Design Software
    A. Incorporate all techniques learned in HTML
    B. Design image maps
    C. Create pop-up menus (using SPRY)
    D. Use Cascading Style Sheets (CSS) as a site layout technique for easy editing
    E. Create multi-page sites
    F. Use tables to display data
    G. Use tables as a page layout technique
    H. Link pages
    I. Create image rollovers
    J. Design ordered and unordered lists
    K. Create and insert Flash movie
VIII. JavaScript Introduction
    A. Understand JavaScript basics
    B. Use conditional statements
IX. JavaScript and Images
    A. Create an image and/or hypertext rollover/mouseover
    B. Create a cycling banner
    C. Locate and insert Javascript found on the Internet

Student Outcomes:

After successfully completing this course, the student will demonstrate the ability to:
1. recount a brief history of the Internet.
2. explain the parts of an Internet address.
3. explain the parts of a network and why we use a network.
4. distinguish among search engines, subject guides, and metasearch engines.
5. utilize various search techniques.
6. understand copyright issues on the Web.
7. determine when and why web sites are created.
8. identify HTML starting tags.
9. save HTML documents properly.
10. integrate levels of headings into Web pages.
11. create unordered and ordered lists.
12. organize web page information with single and double spacing.
13. organize web page information with blockquote and proper spacing.
14. organize page information with horizontal rules.
15. implement attributes and values.
16. change Web page color defaults by altering attributes and values.
17. alter text colors.
18. understand the effects of color.
19. create three types of hyperlinks: to another spot within a page, to a URL on the web, to another self-created web page.
20. control the size, style, and color of fonts.
21. download pictures from the Web.
22. edit graphics in Photoshop.
23. insert graphics into self-created Web pages.
24. create image maps.
25. change the size of graphics.
26. understand the basics of creating an animation with Flash.
27. use tables to organize information.
28. use a table to layout a page or a site.
29. turn pictures into hyperlinks.
30. understand the purpose of JavaScript.
31. create an image rollover and/or hypertext rollover using JavaScript.
32. create a cycling banner using JavaScript.
33. create various web pages and web sites incorporating HTML, JavaScript, and animation techniques.
34. understand the importance of storyboarding and be able to create a usable storyboard.
35. understand the importance of a site map and be able to create a useable site map and link it to a web page.

NJ Student Learning Standards

Career Ready Practices

CRP1   Act as a responsible and contributing citizen and employee.
CRP2   Apply appropriate academic and technical skills.
CRP3   Attend to personal health and financial well-being.
CRP4   Communicate clearly and effectively and with reason.
CRP5   Consider the environmental, social and economic impacts of decisions.
CRP6   Demonstrate creativity and innovation.

CRP7   Employ valid and reliable research strategies.
CRP8   Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9   Model integrity, ethical leadership and effective management.
CRP10   Plan education and career paths aligned to personal goals.
CRP11   Use technology to enhance productivity.
CRP12   Work productively in teams while using cultural global competence.

Visual and Performing Arts

Standard 1.1 The Creative Process: All students will demonstrate an understanding of the elements and principles that govern the creation of works of art in dance, music, theatre, and visual art.

Strand D   Visual Art

Standard 1.3 Performance: All students will synthesize those skills, media, methods, and technologies appropriate to creating, performing, and/or presenting works of art in dance, music, theatre, and visual art.

Strand D   Visual Art

Standard 1.4 Aesthetic Responses & Critique Methodologies: All students will demonstrate and apply an understanding of arts philosophies, judgment, and analysis to works of art in dance, music, theatre, and visual art.

Strand A   Aesthetic Responses
Strand B   Critique Methodologies

Technology

Standard 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

Strand A   Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.*
Strand B   Creativity and Innovation: *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*
Strand C   Communication and Collaboration: *Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.*
Strand D   Digital Citizenship: *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*
Strand E   Research and Information Literacy: *Students apply digital tools to gather, evaluate, and use information.*
Strand F   Critical Thinking, Problem Solving, and Decision-Making: *Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.*

21st Century Life and Careers

9.3 Career and Technical Education (CTE)

9.3.12/AR.4	Analyze the legal and ethical responsibilities required in the arts, audio visual technology, and communications workplace.
9.3.12.AR-PRT.2	Demonstrate the production of various print, multi-media, or digital medial products.
9.3.12.AR-VIS.3	Analyze how the application of visual arts elements and principles of design communicate and express ideas.

III.   Proficiency Levels

This course is open to grades 10–12. There are no prerequisites for this course.

IV.   Methods of Assessment

Student Assessment

The teacher will provide a variety of assessments during the course of the year including but not limited to:

- Hands-on exercises
- Quizzes/Tests
- Projects
- Classwork
- Presentations

Web pages may include but are not limited to the following:

1. Web page containing bulleted and numbered lists; headings; spacing techniques; background, text, and font color.
2. Web page containing items outlined above as well as hypertext links, font attributes and values, downloaded graphics, and tables.
3. Web page containing self-made graphics, animation, image maps, and JavaScript.
4. A project incorporating a variety of web page design techniques; project must be a school, community or non-profit related topic. Other suggestions are to create a training module, using interactive techniques, so as to create an online course or create a personal digital portfolio.

Evaluation of web pages will be completed through the use of comprehensive rubrics that assess students' knowledge of web design techniques and style.

Curriculum/Teacher Assessment

The teacher will provide the subject area supervisor with suggestions for changes on an ongoing basis.

V.   Grouping

This course is open to all students with a desire to learn and expand their knowledge of web page design. There is no prerequisite to this course.

VI.   Articulation/Scope & Sequence/Time Frame

Course length is one semester and is offered to students in grades 10-12.

VII.   Resources

A.   Hardware
- Computer with Internet access
- Scanner
- Digital camera

B.   Software
- Word processing software
- Web design software
- Image manipulation software
- Animation software

C.   Workbooks—includes but not limited to:

- *Adobe Photoshop CS6, Classroom in a Book*, The official training workbook from Adobe Systems, Copyright 2012
- *Adobe Creative Suite 6, Design & Web Premium, Classroom in a Book,* The official training workbook from Adobe Systems, Copyright 2013
- *Adobe Flash CS3 REVEALED,* Author – Jim Shuman, Thomson Course Technology, a division of Thomson Learning, Inc. Copyright 2008
- *Adobe Dreamweaver CS3 REVEALED* by Sherry Bishop. Published by Thomson Course Technology, a division of Thomson Learning, Inc. 2011
- *The Web Collection CS3 REVEALED* by Sherry Bishop, Jim Shuman & Barbara M Waxer. Published by Thomson Course Technology, a division of Thomson Learning, Inc. 2008
- *Adobe Flash CS4 REVEALED,* Author Jim Shuman. Published by Delmar, Cengage Learning, Copyright 2010
- *The Principles of Beautiful Web Design,* by Joseph Beaird. Published by SitePoint. March 2007
- *The CSS Anthology* by Rachel Andrew. Published by SitePoint. September 2009
- *Simply Javascript* by Kevin Yank and Cameron Adams. Published by SitePoint. September 2007
- *DreamWeaver CS3* by Tom Negrino and Dori Smith. Published by Peachpit Press 2007
- *Sams Teach Yourself Adobe Flash CS3 Professional in 24 hours* by Phillip Kerman. Published by Sams Publishing. 2007

D.   Online Resources
- Design Techniques
  About.com: Web Design / HTML – Design Basics – Jennifer Kyrnin
    http://specials.about.com/service/newsletters/webdesign/1282640400.htm
    http://specials.about.com/service/newsletters/webdesign/1280221200.htm
    http://specials.about.com/service/newsletters/webdesign/1276592400.htm
- Color:
  Color, Contrast, and Dimension - ColorMaker by Sam Chaukri
    http://www.bagism.com/colormaker
- Design/Tutorials - Webmonkey
    http://www.webmonkey.com
    Lynda.com (subscription)
    http://www.adobe.com/designcenter/tutorials/
- Photoshop
    http://www.photoshop-tutorials-plus.com/
- Image Maps
    http://webdesign.about.com/od/imagemaps/a/image_maps_negs.htm?nl=1

- Backgrounds
  http://bgpatterns.com/
  www.bagism.com/colormaker
- HTML Tutorials – HTML Helper Ring - Richard Gerald Lowe Jr.
  http://www.html-helper.net/
- Copyright
  What is copyright?
  http://www.teachingcopyright.org/
  http://www.eff.org/
- Copyright friendly images/fonts
  http://www.pics4learning.com/
  http://free-clipart.net/
  http://www.openfontlibrary.org
- CSS (Cascading Style Sheets)
  http://webdesign.about.com/od/dreamweaverhowtos/ss/aadwcss.htm
- Web Portfolio Article
  http://webdesign.about.com/od/jobs/a/aa102207.htm?nl=1

VIII. Methodologies

The following methods of instruction are suggested: lecture, demonstration, practice projects, heterogeneous ability grouping, and individualized projects.

IX. Suggested Activities

The instructor will present and assign a variety of projects incorporating the use of various aspects of web page design concepts. Projects should focus on school and/or community-based topics.

X. Interdisciplinary Connections

Web site projects will incorporate interdisciplinary study wherever possible (collaboration between web page students and students in other academic classes is stressed).

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, English Language Learners, and Gifted & Talented Students

Differentiating instruction is a flexible process that includes the planning and design of instruction, how that instruction is delivered, and how student progress is measured. Teachers recognize that students can learn in multiple ways as they celebrate students' prior knowledge. By providing appropriately challenging learning, teachers can maximize success for all students.

Examples of Strategies and Practices that Support:

Students with Disabilities
- Use of visual and multi-sensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products

- Testing accommodations
- Authentic assessments

Gifted & Talented Students
- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven
- Real-world problems and scenarios

English Language Learners
- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Teacher modeling
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
    - •word walls
    - •sentence frames
    - •think-pair-share
    - •cooperative learning groups

XII.   Professional Development

The teacher will continue to improve expertise through participation in a variety of professional development opportunities.

Class	September/February	October/March	November/April	December/May	January/June

Web Page Design	**Introduction to the Internet**
	• Internet history
	• Technology timeline
	• Web addressing
	• Networking
	• Effective Internet searching techniques
	  o Subject guides
	  o Search engines
	  o Boolean operators
	  o Spiders and robots
	  o Metasearch engines
	  o Reliability of information
	• Proper filing of projects
	• Copyright and proper citation
	
	HTML programming
	• Backbone of web page
	  o Heading tags
	  o Numbered and bulleted lists
	  o Table tags
	  o Line and paragraph spacing
	  o Text colors, sizes and fonts
	  o Background colors and images
		Project 1
		• Create a multi-page web site using HTML programming
		• Use text color, style, font, font size, headings
		• Use background colors, textures and images
		• Incorporate both numbered and bulleted lists
		• Insert and properly place graphics using tables
		• Link all pages together
		
		Final HTML Project
		• Create a web site about a pre-approved topic using all of the HTML tags learned.
		• Must be at least 3 content pages with a Works Cited page
		• Must use tables to place objects
		• Must storyboard for preplanning layout
			Intro to Animation software (such as Adobe Flash)
			• Create a movie file and set properties
			• Enter content on the stage (text, graphics and drawings)
			• Select and position graphics
			• Modify drawings, using stroke and fill settings
			• Rotate, skew, scale, resize, flip and reshape objects
			• Use segments and overlaps to create objects
			• Create and edit symbols
			• Group and ungroup objects
			• Animate the movie
			• Work with frames, keyframes and layers
			• Create buttons using action scripts
			• Use tweening
			  o Motion
				Intro to web design software (such as Adobe Dreamweaver)
				Project 2
				• Research appropriate content and graphics to be used in site
				• Create all pages using a table layout
				• Incorporate the use of animation into site
				• Use advanced features of Design Sotware
				  o Flash text
				  o Spry
				  o Image map
				A rubric will be provided for assessment and will include all of the web design features assigned in the project
					Introduction to CSS Technology and layout design
					Final Project
					• Create a 5-page web site including opening page, three content pages and a works cited page.
					• All content pages should be created using CSS technology
					• One of the pages must have an animation
					• Each page will contain the menu bar for easy navigation
					A rubric will be provided for

	o Horizontal rules
	o External links
	• Linking pages
	• Inserting graphics
	• Formatting graphics
	o Size
	o Color
	o Fade/Transparency
	o Crop
	o Resolution
	o Sources of graphics
	    • Online
	    • Digital
	    • Scanner
	    • Flash
	o Graphic file formats
	    • Bitmap
	    • Vector
	    • GIF
	    • JPEG
	    • TIFF
	    • PNG
	    • PSD
	Projects:
	• Scavenger hunt on Internet history, using searching techniques
	• Internet timeline
	• Adding emphasis (HTML enhancements)
	A check off sheet will be provided
		• Must create a flow chart/sitemap for content organization
		• Insert appropriate JavaScript
		o Image rollover
		o Cycling banner
		• All pages must be linked using a menu bar
		• All research must be documented
		
		Projects:
		• Autobiography
		• Spring Has Sprung
		• My Schedule
		• Calendar
		
		A rubric will be provided for assessment and will include all of the web design features assigned in the projects
			tweening
			o Shape tweening
			o Tweening the color
			o Motion guide
			• Insert sounds
			• Create, enter, edit, format and transform text
			• Animate text
			• Export flash file for publishing on the web
			
			Projects:
			• Garden
			• Fish tank
			• Airplane/skyline
			• Car tutorial
			• Four exercises
			    • Name
			    • Rotate
			    • Move
			    • Fade
			A rubric will be provided for assessment and will include all of the design features assigned in the projects
					assessment and will include all of the web design features learned throughout the course.