

## Web Design Foundations

**Level:** 2

**Career Cluster:** Digital Technology

**Program:** Information Technology

**Pathway(s):** Web Design

### Course Catalog Description

Introduces students to the principles of designing accessible, user-centered websites through visual design, content development, and user experience planning. Students apply industry practices including client communication, site architecture, media integration, and usability testing to develop and present a functional web design project that reflects professional standards and career readiness.

### Summary

Course within the Information Technology pathway that introduces students to the principles, processes, and practices used to design effective, user-centered websites. Students explore career pathways in web design while developing skills in digital citizenship, ethical content use, and online safety. The course emphasizes visual design principles, client communication, and project planning as students create site maps, wireframes, and structured web content. Learners integrate media, apply accessibility standards, and test for usability to improve overall user experience. Through collaborative projects and work-based learning experiences, students build professionalism, teamwork, and communication skills while producing a final web design project that demonstrates their ability to plan, design, and present a functional and visually effective website. Students will also reflect on their design process and outcomes to identify strengths and areas for continued growth in web design.

### Notes

The updated course reflects a significant shift from a traditionally skills-based and tool-oriented curriculum to a more comprehensive, standards-aligned, and student-centered framework. While the previous version emphasized foundational web development tasks such as project planning, site mapping, client communication, and understanding copyright and licensing, it primarily focused on discrete technical skills and general web development processes. In contrast, the new course expands these concepts into clearly defined learning progressions that integrate career exploration, digital citizenship, ethical technology use, and postsecondary pathways alongside design and development skills. Greater emphasis is now placed on user experience, accessibility, testing, and iterative improvement, reflecting current industry expectations for inclusive and user-centered design. Additionally, the updated course strengthens professional skill development through embedded work-based learning, collaboration, leadership, and reflection, culminating in a comprehensive final project that demonstrates not only technical ability but also communication, planning, and problem-solving competencies.

## Student Learning Outcomes

### 1. Career Exploration and Postsecondary Opportunities

**Objective:** *Students will analyze career pathways in information technology, exploring industry roles, workplace expectations, required education, certifications, professional organizations, and postsecondary opportunities available in Colorado in order to make informed academic and career decisions.*

- 1) Identify employment opportunities in various fields with a focus in the area of information technology
  - a. Recognize the work typically performed, tools and technology used, and nature of work environments
  - b. Identify potential certifications within the careers
  - c. Find membership organizations associated with the careers
  - d. Understand the necessary education associated within the careers
- 2) Define professionalism within the context of information technology
  - a. Criticism and evaluation
  - b. Presentation
  - c. Assessment
- 3) Recognize laws, regulations, and ethics significant to the fields of information technology
- 4) Identify postsecondary opportunities offered in the state of Colorado
  - a. Technical college, community college, 4-year institutions
  - b. Certificates, associates, bachelor, and advanced degree opportunities

### 2. Digital Citizenship, Ethics, and Online Safety

**Objective:** *Students will evaluate ethical, legal, and safe online behaviors in order to create and share web content responsibly, protect personal and organizational data, and apply digital citizenship practices in academic and professional settings.*

- 5) Explain responsible online behavior, privacy expectations, and secure communication practices in web environments
- 6) Identify strategies for protecting personal information, accounts, and passwords and describe safe, appropriate file sharing, posting, and collaboration practices
- 7) Analyze legal and ethical issues related to web content and media use, including copyright, royalty-free, Creative Commons, and public domain resources
- 8) Justify the ethical use of images, audio, video, and text in web projects and evaluate the social impact of websites and digital communication on users, communities, and organizations

### 3. Principles of Web and Visual Design

**Objective:** *Students will apply foundational design principles in order to create visually effective, readable, and audience-centered web page layouts.*

- 9) Identify the elements and principles of design used in effective websites

- 10) Recognize how color, contrast, alignment, proximity, repetition, whitespace, and typography influence readability, tone, audience, usability, and visual hierarchy
- 11) Apply design principles to evaluate and improve existing web page layouts
- 12) Create design mockups or page compositions that demonstrate balance, consistency, and branding

#### 4. Client Planning and Project Communication

**Objective:** *Students will analyze client needs and develop planning documents in order to communicate project goals, audience expectations, technical requirements, and design constraints.*

- 13) Gather and organize client or stakeholder information needed to guide a web project, including purpose, target audience, message, branding, content sources, and timeline considerations
- 14) Write a project brief that summarizes goals, audience needs, and desired outcomes
- 15) Develop technical specifications for a website, including device considerations, browser compatibility, accessibility, and performance expectations
- 16) Practice professional feedback processes by presenting ideas, asking clarifying questions, and revising plans based on critique

#### 5. Site Architecture and User Experience

**Objective:** *Students will organize website content and navigation in order to design clear, logical, and user-friendly experiences for intended audiences.*

- 17) Use brainstorming or mind-mapping strategies to generate and categorize website content ideas
- 18) Create a site map that illustrates page relationships, navigation pathways, and content structure
- 19) Develop wireframes for individual pages that plan the placement of navigation, text, media, and interactive elements
- 20) Evaluate user experience decisions based on audience needs, readability, and ease of navigation

#### 6. Web Content Development and Media Integration

**Objective:** *Students will create and refine written and visual web content in order to communicate clearly, support user needs, and maintain consistency across a website.*

- 21) Create audience-appropriate text for web pages using clear, concise, and purposeful language
- 22) Select and integrate media assets that support communication goals and visual consistency
- 23) Evaluate images, graphics, icons, and multimedia for relevance, quality, and legal use
- 24) Revise content to improve tone, clarity, organization, and audience engagement
- 25) Produce page content that aligns with branding, purpose, and user expectations

## 7. Accessibility, Testing, and Improvement

**Objective:** Students will test and improve web products in order to increase accessibility, usability, functionality, and overall quality for a range of users and devices.

- 26) Identify accessibility features and inclusive design practices that improve the user experience
- 27) Examine the use of headings, alternative text, color contrast, readable fonts, and keyboard-friendly navigation
- 28) Test websites for functionality, readability, and consistency across browsers, devices, or screen sizes
- 29) Analyze feedback and testing results to recommend or implement improvements
- 30) Troubleshoot common design or content issues and document revisions made during the improvement process

## 8. Work-Based Learning and Professional Practice

**Objective:** Students will apply web design knowledge in authentic learning experiences in order to demonstrate professionalism, collaboration, time management, and responsiveness to feedback.

- 31) Demonstrate professional behaviors during authentic work-based learning experiences
- 32) Practice punctuality, task completion, communication, and accountability
- 33) Collaborate with peers, instructors, or community partners to complete project tasks and meet expectations
- 34) Apply feedback from critiques, check-ins, or client-style reviews to improve work products
- 35) Reflect on strengths, growth areas, and workplace habits developed through project-based experiences

## 9. Leadership and Team Collaboration

**Objective:** Students will develop leadership and collaboration skills in order to contribute productively to teams, support shared goals, and communicate design decisions with confidence.

- 36) Demonstrate effective teamwork strategies when planning and completing web design tasks
- 37) Apply communication and conflict-resolution skills to support productive collaboration
- 38) Present design ideas and project updates using appropriate technical vocabulary and supporting rationale
- 39) Evaluate individual and team contributions in order to set goals for continued growth and leadership development

## 10. Final Assessment Project

**Objective:** Students will synthesize course knowledge and skills in order to plan, develop, revise, and present a final web design project that demonstrates foundational proficiency.

- 40) Develop a final web design project that addresses a defined purpose, audience, and communication goal
- 41) Apply planning, design, content, accessibility, and testing processes to produce a polished final product
- 42) Present and justify design choices using evidence from the project brief, user needs, and design principles
- 43) Evaluate the completed project and propose next steps for future improvement or expansion

## 11. Career and Technical Student Organizations

**Objective:** *Using the CTSO Resource Document, chapter activities will provide some of the best opportunities CTSO members will have to learn by doing. A successful program of work creates a positive learning atmosphere in the classroom. CTSO members learn how to accept responsibility, work as a team, manage a budget, and handle success and failure. Per the CTE Admin Handbook, CTSOs are embedded into curriculum.*

### Professional Development

Prepare each member for entry into the workforce and provide a foundation for success in a career. Becoming a professional does not stop with acquiring a skill, but involves an increased awareness of the meaning of good citizenship and the importance of labor and management in the world of work.

### Community Service

Promote and improve goodwill and understanding among all segments of the community through services donated by CTSO chapters, and to instill in its members a lifetime commitment to community service.

### Business and Industry Connections

Increase awareness of quality job practices and attitudes, and increase the opportunities for employer engagement and eventual employment.

### Financial Leadership

Plan and participate in activities to allow all members to carry out the chapter's projects. Educate members on their own personal finance for current and future success.

### Public Relations

Make the general public aware of the good work that students in career and technical education are doing to better themselves and their community, state, nation, and world.

### Social Activities

To increase cooperation in the school and community through activities that allow CTSO members to get to know each other in something other than a business or classroom setting.

## Academic Standards Alignment

Colorado CTE courses are required to integrate academic and essential skills into course content. The following academic standards have been identified as aligned to this course and should be integrated throughout instruction.

[CO CTE Academic Standards Resources](#) (Rubrics, integration strategies, etc)

[CDE Colorado Academic Standards Online](#) (Online standards lookup tool)

*Note: Mathematics and Science standards will be added in the future. Visit the [Colorado Academic Standards](#) page for the most current version.*

## Reading, Writing and Communicating Crosswalk

Course: Web Design Foundations

Colorado Academic Standards – Reading, Writing, and Communicating

| Standard                                  | Prepared Graduate Competency              | Description                                         | Course Evidence / Alignment                                                                                                                     |
|-------------------------------------------|-------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard 1: Oral Expression and Listening | Prepared Graduate 1 – Collaboration       | Collaborate effectively as group members or leaders | Students work collaboratively to plan web projects, gather client requirements, manage timelines, and respond to peer and stakeholder feedback. |
| Standard 1: Oral Expression and Listening | Prepared Graduate 2 – Oral Presentations  | Deliver effective oral presentations                | Students explain web design concepts, project plans, and design decisions to peers and instructors during reviews and critiques.                |
| Standard 2: Reading for All Purposes      | Prepared Graduate 4 – Informational Texts | Read a wide range of informational texts            | Students read and interpret technical documentation, project briefs, legal guidelines, usability standards, and design resources.               |
| Standard 2:                               | Prepared                                  | Understand how language                             | Students select                                                                                                                                 |

|                                         |                                             |                                            |                                                                                                                                            |
|-----------------------------------------|---------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Reading for All Purposes                | Graduate 5 – Language in Context            | functions in different contexts            | language and visual content appropriate to audience, purpose, branding, and usability within web environments.                             |
| Standard 3: Writing and Composition     | Prepared Graduate 7 – Informational Writing | Craft informational/explanatory texts      | Students write project briefs, technical specifications, site maps, and explanatory documentation for web projects.                        |
| Standard 3: Writing and Composition     | Prepared Graduate 9 – Writing Process       | Demonstrate mastery of the writing process | Students revise and refine project documentation to ensure clarity, accuracy, and professionalism.                                         |
| Standard 4: Research Inquiry and Design | Prepared Graduate 10 – Research and Ethics  | Gather and ethically use information       | Students research web content, multimedia licensing, accessibility requirements, and legal considerations and apply information ethically. |

## Free Resource Links

### 1. Career Exploration and Postsecondary Opportunities

- CompTIA IT Careers (IT careers, certifications, pathways)  
<https://www.comptia.org/content/it-careers-path-roadmap>
- CareerOneStop Tech Careers (career planning, job outlook, skills)  
<https://www.careeronestop.org/ExploreCareers/explore-careers.aspx>
- O\*NET Online (job roles, skills, work environments)  
<https://www.onetonline.org>
- Colorado Community Colleges (postsecondary programs, certificates, degrees)  
<https://cccs.edu>

### 2. Digital Citizenship Ethics and Online Safety

- Common Sense Education Digital Citizenship (online safety, media literacy, ethics)  
<https://www.commonsense.org/education/digital-citizenship>
- Stay Safe Online (cybersecurity, privacy, best practices)  
<https://staysafeonline.org>
- Creative Commons Search (copyright, licensing, media use)  
<https://search.creativecommons.org>
- Google Safety Center (privacy, security, responsible use)  
<https://safety.google>

### 3. Principles of Web and Visual Design

- Canva Design School (color, typography, layout)  
<https://www.canva.com/learn/design>
- Adobe Color (color theory, palettes, contrast)  
<https://color.adobe.com>
- Nielsen Norman Group (usability, UX principles)  
<https://www.nngroup.com/articles>
- Interaction Design Foundation (visual design, UX design)  
<https://www.interaction-design.org>

### 4. Client Planning and Project Communication

- Smartsheet Project Templates (project planning, briefs, timelines)  
<https://www.smartsheet.com/project-planning-templates>
- Lucidchart (diagrams, planning, communication)  
<https://www.lucidchart.com>
- Milanote (creative briefs, idea organization)  
<https://www.milanote.com>
- Google Workspace (collaboration, documents, communication)  
<https://workspace.google.com>

## 5. Site Architecture and User Experience

- Figma (wireframing, prototyping, UX)  
<https://www.figma.com>
- UXPin (design systems, wireframes, UX)  
<https://www.uxpin.com>
- Slickplan (site maps, architecture)  
<https://slickplan.com>
- Optimal Workshop (user testing, UX research)  
<https://www.optimalworkshop.com>

## 6. Web Content Development and Media Integration

- Unsplash (images, media assets, free photos)  
<https://unsplash.com>
- Pixabay (graphics, videos, media)  
<https://pixabay.com>
- Grammarly (writing, editing, clarity)  
<https://www.grammarly.com>
- Pexels (photos, video content)  
<https://www.pexels.com>

## 7. Accessibility Testing and Improvement

- W3C Web Accessibility Initiative (accessibility standards, WCAG)  
<https://www.w3.org/WAI>
- WebAIM (accessibility tools, testing)  
<https://webaim.org>
- Color Contrast Checker (color accessibility, readability)  
<https://webaim.org/resources/contrastchecker>
- Google Lighthouse (website testing, performance, accessibility)  
<https://developers.google.com/web/tools/lighthouse>

## 8. Work Based Learning and Professional Practice

- LinkedIn Learning (professional skills, training)  
<https://www.linkedin.com/learning>
- Indeed Career Guide (workplace skills, job prep)  
<https://www.indeed.com/career-advice>
- Glassdoor (career insights, workplace culture)  
<https://www.glassdoor.com>

## 9. Leadership and Team Collaboration

- MindTools (leadership, teamwork, communication)  
<https://www.mindtools.com>
- Trello (project management, collaboration)  
<https://trello.com>
- Asana (teamwork, task tracking)  
<https://asana.com>

- Slack (communication, collaboration)  
<https://slack.com>

### **10. Final Assessment Project**

- GitHub Pages (web publishing, portfolios)  
<https://pages.github.com>
- Netlify (deployment, hosting)  
<https://www.netlify.com>
- CodePen (front end projects, prototyping)  
<https://codepen.io>
- Wix (website builder, project showcase)  
<https://www.wix.com>



## Technology Student Association – National Competitive Events

### Webmaster

**Objective:** *Students will design, build, launch, test, document, and explain a multi-page website that addresses the annual TSA Webmaster design challenge.*

- Research the annual TSA Webmaster topic and identify the website's purpose, audience, content needs, and technical requirements.
- Plan the website structure using a sitemap, wireframes, page layouts, or other web design planning tools.
- Develop a multi-page website that communicates the team's solution to the annual theme and problem.
- Apply web design practices related to navigation, accessibility, usability, visual consistency, browser compatibility, and responsive layout.
- Launch the website on a publicly accessible web server according to TSA submission requirements.
- Test and troubleshoot the website for broken links, layout errors, access issues, readability, and functional problems.
- Participate in an interview explaining the website, design choices, research, troubleshooting process, and development workflow.

### Resources

- Technology Student Association – Webmaster competition guidelines  
<https://tsaweb.org/competitions-programs/tsa/themes-problems>
- GitHub Pages – Website hosting for student projects  
<https://pages.github.com/>
- W3Schools – Web development tutorials  
<https://www.w3schools.com/>
- GitHub Pages – Website hosting for student projects  
<https://pages.github.com/>



## Technology Student Association – National Competitive Events

### Promotional Design

**Objective:** *Students will design, produce, document, and present promotional materials that meet TSA Promotional Design requirements for branding, visual communication, production quality, and portfolio documentation.*

- Research the annual TSA Promotional Design theme, target audience, required products, and branding expectations.
- Develop a consistent visual identity using appropriate typography, layout, color, imagery, and design principles.
- Create required promotional items that communicate a clear theme, message, and purpose.
- Use digital design tools and production methods to prepare clean, professional, and usable final products.
- Document the design process through sketches, drafts, production notes, references, and required portfolio materials.
- Prepare final promotional products for submission or display according to TSA event procedures.
- Evaluate the final entry using TSA criteria for creativity, consistency, production quality, communication, and theme alignment.

### Resources

- Technology Student Association – Promotional Design competition guidelines  
<https://tsaweb.org/competitions-programs/tsa/themes-problems>
- Canva – Branding, layouts, and promotional design templates  
<https://www.canva.com/>
- Adobe Express – Promotional graphics and design tools  
<https://www.adobe.com/express/>
- Adobe Illustrator – Vector design and production graphics  
<https://www.adobe.com/products/illustrator.html>