THE REGISTERED APPRENTICESHIP OCCUPATIONS AND STANDARDS CENTER OF EXCELLENCE (AOSC)

Web and Digital Interface Designer National Occupational Framework

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Introduction to Using This Document

Under the Registered Apprenticeship Technical Assistance Centers of Excellence award, the Urban Institute leads the Occupations and Standards work. One of the main objectives of Urban's project is to create high-quality, well-researched, consensus-based work process schedules that are nonproprietary and widely available. This document is a product of that work and contains three sections: the occupational overview, the work process schedule, and the related technical instruction.

The **occupational overview** is a general introduction, including alternative job titles, any prerequisites, and, if applicable, the total number of hours needed to complete a time-based or hybrid program.

The **work process schedule** outlines the major job functions, competencies, and/or hours an apprentice completes in a registered apprenticeship program. It outlines what apprentices are expected to learn on the job with the support of a mentor or journeyworker (a worker mastering the competencies of an occupation in a particular industry), including both core competencies and those deemed optional by experts in the field. The work process schedule is the foundational document guiding a program.

Urban works with numerous experts to ensure the content is thoroughly researched and vetted to reflect the expectations of industry, educators, labor unions, employers, and others involved in apprenticeship for this occupation. Sponsors and employers can use the work process schedule as their program standards with assurances it has been approved by experts in the field.

The **related technical instruction** presents considerations for the coursework that apprentices will undertake to supplement on-the-job learning. It is intended to serve as a reference to sponsors exploring their options for the accompanying classroom, virtual, or hybrid training.

How to Use the Work Process Schedule

Sponsors can adapt the work process schedule to accommodate their needs for competency- or time-based or hybrid programs. In a **competency-based** apprenticeship, sponsors assess apprentices' progress across core and optional competencies listed in the work process schedule. In a **time-based** apprenticeship, apprentices complete a predetermined number of hours across major job functions and the program overall. In a **hybrid** apprenticeship, sponsors monitor apprentices' hours spent on major job functions and assess their proficiency across competencies.

Each program type has a different method of assessment:

- **For a competency-based program**, apprentices engage in activities and make progress toward proficiency in the identified competencies. Sponsors overseeing apprentices' work assess their mastery of the outlined competencies using the following rating scale:

  4—Competent/proficient (able to perform all elements of the task successfully and independently)

  3—Satisfactory performance (able to perform elements of the task with minimal assistance)

  2—Completed the task with significant assistance

  1—Unsuccessfully attempted the task

  0—No exposure (note the reason—absence, skill isn't covered, etc.)

  The competencies may be completed in any order. Apprentices must perform at a level 4 or 3 in all competencies listed as "core" to complete the apprenticeship program successfully.

- **For a time-based program,** sponsors monitor apprentices' completion of hours in training across major job functions. The total number of hours recommended for this occupation is listed in the occupational overview and is based on guidance from the US Department of Labor. Generally, apprentices must have at least 2,000 hours overall for on-the-job learning, but occupations of greater complexity may require more hours. Sponsors will provide apprentices with supervised work experience and allocate the total number of hours across the major job functions to adequately train their apprentices.

- **The hybrid approach** blends both competency- and time-based strategies. Sponsors measure apprentices' skills acquisition through a combination of completing the minimum number of hours of on-the-job learning successfully demonstrating identified competencies. Sponsors will assess apprentices' proficiencies as described for competency-based programs with a rating scale of 0–4 for every core competency. Generally, apprentices have at least 2,000 hours overall for on-the-job learning, but occupations of greater complexity may require more hours. Sponsors will document apprentices' completion within a minimum and maximum range of hours assigned for each major job function.

Web and Digital Interface Designer Occupational Overview

Occupational Purpose and Context

Web and Digital Interface Designers develop, design, and refine digital interfaces to create an engaging and user-friendly experience. They blend creative design principles with technical skills to construct interfaces that optimize user interaction and align with business objectives. Their primary purpose is to create interface designs that not only attract users but also enhance usability and accessibility across various devices, including desktops, tablets, and mobile phones.

Designers in this field are tasked with combining artistic design principles with technical skills to develop visually cohesive and interactive components such as menus, buttons, icons, and overall layouts. They must have a deep understanding of user behavior, visual design trends, and responsive design principles to create interfaces that adapt seamlessly to different screen sizes and resolutions. These professionals often collaborate closely with User Experience (UX) designers, web developers, product managers, and other stakeholders to ensure that the design vision aligns with project objectives, user needs, and technical feasibility.

Potential Job Titles

Web designer, interface designer, front-end designer, user interface designer

Apprenticeship Prerequisites

A strong candidate for a web and digital interface design apprenticeship should have basic knowledge of Figma, and design tools (such as Adobe Creative Suite) is commonly required. Familiarity with JavaScript and a basic design portfolio are advantageous but not mandatory.

Career Ladder

Individuals with sufficient experience as a Web and Digital Interface Designers may be eligible to advance into the following positions:

- Senior Web and Digital Interface Designer
- User Interface (UI) Manager or Design Lead

- User Experience (UX) Designer/Researcher
- Product Designer
- Creative Director or Art Director
- Design Director or Head of Design
- Chief Design Officer (CDO) or Chief Experience Officer (CXO)
- Interaction Designer
- Front-End Developer
- Accessibility Specialist
- Design Consultant/Freelancer

Recommended Length of Apprenticeship (Time/Hybrid Programs Only)

The recommended length of on-the-job learning in a web and digital interface designer apprenticeship program is 2,000–4,000 hours.

Work Process Schedule

Graphic Designer

ONET Code: 15-1255.00

RAPIDS Code: 4001

Instructions for Use:

Competency-based programs: In the "performance level achieved" column of the work process schedule (see examples starting on the next page), assess apprentices' performances on each competency with the scale below. No monitoring of hours is required for this approach. See "Guidelines for Competency-Based, Hybrid and Time-Based Apprenticeship Training Approaches," US Department of Labor, Employment and Training Administration, Office of Apprenticeship, October 20, 2015, https://www.apprenticeship.gov/sites/default/files/bulletins/Cir2016-01.pdf.

4—Competent/proficient (able to perform all elements of the task successfully and independently)

3—Satisfactory performance (able to perform elements of the task with minimal assistance)

2—Completed the task with significant assistance

1—Unsuccessfully attempted the task

0—No exposure (note the reason—absence, skill isn't covered, etc.)

Time-based programs: In the "hours" row, specify the number of hours apprentices will fulfill for each job function. No assessment of competencies is required for this approach.

Hybrid programs: In the "performance level achieved" column, assess apprentices' performances on each competency using the 0–4 scale above. In the "hours" row, identify a range of hours apprentices should spend working on each major job function.

Job Function 1: Performs general practices for business operations and client engagement		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Demonstrates a working understanding of the organization's structure, personnel rules, policies, responsibilities and general understanding of work ethics, interpersonal communications, and related policies	Core	
B. Practices safety procedures and rules	Core	
C. Adheres to stated goals, mission, and vision of the employer	Core	
D. Works independently within administrative, production, and postproduction communications and workflow	Core	
E. Adapts to agreed-upon practices for specific client interactions and social media	Core	

Job Function 2: Creates and designs user interfaces		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Utilizes industry-standard design tools (e.g., Figma, Adobe XD, Sketch) to create both low- and high- fidelity wireframes and mockups	Core	
B. Applies principles of visual design, including color theory, typography, spacing, and balance	Core	
C. Stays updated with the latest design trends and incorporates them into work while maintaining originality	Core	
D. Encourages brainstorming sessions to explore various creative possibilities	Core	
E. Implements responsive design techniques for cross-device compatibility	Core	
F. Transforms abstract concepts into compelling visual narratives	Core	
G. Proactively seeks inspiration from diverse sources to fuel creativity	Core	

Job Function 3: Develops prototypes and mockups		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Creates high-fidelity interactive prototypes to simulate user experience and navigation flow	Core	
B. Uses prototyping tools (e.g., Figma) to present design concepts to stakeholders	Core	
C. Integrates client feedback and adjust mockups accordingly	Core	
D. Utilizes usability testing tools and methods to validate design effectiveness	Core	

Job Function 4: Collaborates with cross-functional teams		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Shares design specifications and effectively communicates design ideas and rationale to project stakeholders, developers, and UX teams	Core	
B. Participates in brainstorming sessions and feedback loops to refine concepts	Core	
C. Coordinates with developers to ensure the feasibility of the design and troubleshoot any implementation challenges	Core	
D. Maintains project timelines by collaborating closely with project managers	Optional	

Job Function 5: Implements and tests interface designs		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Ensures the design's functional implementation aligns with prototypes through hands-on testing	Core	
B. Collaborates with quality assurance (QA) teams to identify and fix usability issues	Core	
C. Performs A/B testing and data analysis to assess user behavior and design impact	Core	
D. Use web analytics tools (e.g., Google Analytics, Hotjar) to gather insights and optimize designs	Core	

Job Function 6: Adheres to accessibility standards		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Designs and implement interfaces that meet Web Content Accessibility Guidelines (WCAG) and other relevant standards	Core	
B. Uses accessibility tools (e.g., Web Accessibility Versatile Evaluator (WAVE), axe) to check for compliance and usability	Core	
C. Creates alt text for images, keyboard navigation options, and other assistive elements	Core	
D. Stays updated on accessibility best practices and incorporate them into all designs	Core	

Job Function 7: Incorporates artificial intelligence (AI) tools into work procedures and products		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Applies key concepts in AI and creativity studies and their application in creative work	Optional	
B. Uses AI-assisted design tools in art and design work	Optional	
C. Uses AI-based image editing to develop and update human-developed products as well as human and AI-generated product drafts	Optional	
D. Uses AI tools to resolve product challenges	Optional	
E. Adheres to legal, industry, and employer-based ethical standards in the use of AI-assisted product design	Optional	

Job Function 8: Performs general business management practices		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Plans, prioritizes, and executes tasks efficiently and effectively within set time frames	Core	
B. Creates, understands, and manages budgets, financial statements, and cash flow	Optional	
C. Targets market and customer needs and develops effective marketing strategies	Optional	
D. Implements marketing campaigns, conducts sales, and manages customer relationships	Optional	
E. Sets, communicates, and completes short-term and long-term objectives	Optional	
F. Prioritizes tasks, manages multiple projects, and meets deadlines consistently	Core	
G. Creates efficient workflows, maintains organized systems, and manages resources effectively	Core	

Job Function 9: Adheres to high ethical standards		
Hours (time-based and hybrid programs only):		
Competencies	**Core or optional**	**Performance level achieved (0–4)** (competency-based and hybrid programs only)
A. Demonstrates understanding of, and adheres to, copyright laws and intellectual property rights	Core	
B. Respects client confidentiality and privacy	Core	
C. Avoids conflicts of interest and maintains professional boundaries	Core	
D. Demonstrates cultural sensitivity and avoids offensive or discriminatory content	Core	
E. Prioritizes accessibility and usability in design to ensure inclusivity for all users	Core	
F. Cites use of stock images, fonts, AI generated content, and other licensed materials	Core	

Related Technical Instruction

Web & Digital Interface Designer

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Program approach type (time-based, competency-based, hybrid):

Instructions for Use:

Registered Apprenticeships must include at least 144 hours of Related Technical Instruction (RTI). Courses offered by accredited colleges and universities may be assigned a credit hour determination rather than a contact hour determination. In general, an academic credit unit is the equivalent of 15 clock hours of instruction.

Development and Use of this RTI Outline: Employers and academic institutions may approach RTI in markedly different ways. Our goal was not to identify the single best way to provide RTI, or to identify a single provider whose content we deemed to be superior. Instead, our goal was to survey a number of education providers, including employers, institutions of higher education, high schools, private continuing education providers, labor organizations, professional associations and, in some cases, municipalities that provide worker training, to identify topics or courses common among those providers that align with the job functions included in this WPS. Those common topics or courses are reflected in the RTI Outline provided below, which may be useful in developing your RTI program or communicating your needs to an educational partner.

Licensure or certification requirements: Licensure or certification is not typically required for web designers, but some employers may seek employees who have received industry certifications on the use of various software or web design tools.
Degree requirements for licensure or certification, if applicable: Not applicable
Accreditation requirements of instructional provider for licensure or certification, if applicable: Not applicable
Anticipated changes in licensure or certification requirements, if known: Not applicable
Examples of state licensure or certification requirements: Not applicable

Examples of RTI providers for this occupation

Professional associations and labor organizations: The Association for Computing Machinery (ACM) also offers a variety of educational resources for students and professionals in computing, including web design, such as online books, courses, and training videos (https://www.acm.org/education/about-education). Access to these resources is made available to paid ACM Members.

Military: There are several apprenticeship programs under the United Services Military Apprenticeship Program (USMAP) that provide training related to the Web and Digital Interface Designer occupation. These include the Computer Programmer and the Graphic Designer apprenticeship programs (https://usmap.osd.mil/find-a-trade.htm).

Federal and State agencies: Not applicable

Colleges and universities: There are many accredited colleges and universities that offer coursework and educational programming leading to relevant degrees and certifications relevant to the Web and Digital Interface Designer occupation. However, a number of these programs are offered as graduate degree programs or continuing education programs designed for students who already hold an undergraduate degree in computer science or communication arts. Some colleges and universities offer certificates in UX and Digital Interface Design through their non-credit, continuing education programs. Although these courses generally do not fall under the university's accredited programs, and therefore, are not eligible for Federal Student Aid, they do provide an opportunity to participate in a short-term educational program with clearly defined outcomes. An example of such a program is the University of Washington's Professional and Continuing Education program in this area: https://www.pce.uw.edu/certificates/ux-and-visual-interface-design

No-cost/Low-cost online providers: Coursera, EdX and Udemy platforms provide a number of learning opportunities that are relevant to the Web and Digital Interface Designer occupation. Students are generally required to pay tuition to the institution providing the instruction through the Coursera or EdX platform. Google offers courses on the Coursera platform that lead to eligibility for the Google UX Design Professional Certificate (https://www.coursera.org/professional-certificates/google-ux-design). Udemy offers a low-cost program on Design Rules and UI Design for app, web, and systems interfaces (https://www.udemy.com/course/design-rules/?couponCode=ST11MT170325G3).

Continuing education or specialty education providers: There are many companies and organizations that provide instruction, including bootcamps, in digital interface design, UI and UX design. The programs they offer may lead to a certification, but the coursework completed with these providers generally does not transfer to an accredited college. That said, some private educator providers are linked to Coursera or EdX, and through that platform offer opportunities to earn college credits for certain courses. According to CareerFoundry, the following nine courses have been ranked as the best UI design courses in 2025:

- CareerFoundry: https://careerfoundry.com/en/courses/become-a-ui-designer
- Chegg Skills: https://www.chegg.com/skills/our-programs/ux-design
- Learn UI Design: https://www.learnui.design

- Springboard: https://www.springboard.com/courses/ui-ux-design-career-track
- Experience Haus: https://experiencehaus.com/course/ux-ui-design
- Skill Share: https://www.skillshare.com/en/classes/sketch-course-ui-design/1094140217?via=browse-rating-ui-design-layout-grid
- Design Lab: https://designlab.com/ux-academy#

Career Foundry also lists Google and Udemy as top providers—we have included references to those providers under the no-cost/low-cost heading.

Prerequisite knowledge, skills or experience typically required by RTI providers for this occupation

Some RTI providers require participants to have basic information technology literacy, including some basic web- or app-design experience.

Employer Onboarding

Hours: 1–3

Sample learning objectives

- Explain the mission of the employer's organization.
- Explain the organizational structure of the employer's organization.
- Explain the chain-of-command in the employer's organization, as well as the steps and employee should take to report concerns about practices or behaviors in the workplace or to share ideas about how to improve processes or efficiencies.
- Explain the employer's policies for workplace conduct and ethics.
- Explain the employer's policies regarding medical leave and vacation.
- Explain the requirements of the apprenticeship program and the role of the apprentice in the organization's business activities.
- Demonstrate effective use of techniques to management time, including prioritizing among outstanding tasks or deliverables, and communicating to others about the likely timeline for your response or product delivery.

Computer Basics

Hours: 30–45

Sample learning objectives

- Demonstrate the ability to use desktop computers, laptop computers and smart devices to send an email, schedule a meeting, share a document, participate in group editing, use track changes to edit a document, maintain version control of documents, convert Word documents to pdf format, create e-fillable and e-signable forms and create/verify electronic signatures.
- Describe the purpose of network computing and demonstrate the ability to connect devices such as computers, printers, telephones and tablets to a secure network.
- Explain the significance of document security and the use of passwords and other document storage strategies to maintain document privacy and security.
- Explain the importance of Internet security and identify examples of cybersecurity threats, such as malware, Trojan horses, phishing, botnet, spyware, and social engineering.
- Describe effective strategies to prevent cyber-attacks, to create and maintain secure passwords and to take the appropriate action when potential cyber threats are identified.
- Explain the significance of HyperText Markup Language (HTML) for tagging text files on World Wide Web pages to achieve the desired graphic or design effects. Demonstrate the ability to use HTML code to develop a web landing page.

Principles of Graphic Design

Hours: 20–30

Sample learning objectives

- Explain the significance of images in communicating denotative and connotative messages.
- Discuss the tools used by web designers to create, modify and manipulate images.
- Explain the requirements for legal and ethical use of images created by others.
- Demonstrate the ability to use Adobe Creative Suite and Adobe Illustrator.
- Explain how graphic designers use shapes and colors to convey a message.
- Use tools included in Adobe Creative Suite to combine shapes, change colors and modify images.
- Use tools included in Adobe Creative Suite to modify the scale of an image, to create layers and hierarchies of images, to assign colors to images.
- Explain how the color wheel is used when designing websites and demonstrate the ability to create effective color combinations and identify the pantone colors used.
- Demonstrate the ability to create an effective logo or other image that serves as a unifying feature of a website.

- Demonstrate the ability use and create design guides to ensure that an organization's website has the same look, feel and user design characteristics as its other forms of communication (advertising, letterhead, brochures, signs, etc.)

Typography

Hours: 20–30

Sample learning objectives

- Discuss the importance of selecting an appropriate font to convey a connotative or denotative message.
- Describe the basic components of a letter, and the elements of a letter that most significantly differentiate styles or fonts.
- Explain the importance of words, word shapes, word distortions and spacing in conveying a message.
- Discuss the basic typefaces, type families and fonts used in web design.
- Explain the importance of font or type selection when designing logos, monograms or other letter combinations used to create identity.
- Use computer software to create a new font or typeface.
- Explain the importance of type and font, as defined in an organization's style guide, to create a cohesive image and message for an organization.
- Demonstrate the ability to merge type with images.
- Demonstrate the ability to use Adobe Creative Suites to select, create, modify and morph type.

Principles of Effective Website Design

Hours: 20–30

Sample learning objectives

- Explain and demonstrate the use of good principles of web design, including identifying the website's purpose; using effective color, typography and imagery; easy navigation; F-shaped pattern reading; using visual hierarchy to establish a focal point; identifying or creating good content; creating a grid-based layout that improves the user experience; quick load time; and mobile friendly.
- Describe the principal elements of effective User Interface Design
- Explain the principles of User Experience Design
- Describe the key components of the user experience
- List and explain the requirements of Federal legislation regarding web accessibility.
- Explain the importance of designing websites that are accessible to individuals with disabilities, including blindness, color blindness, deafness or hearing impairment, impaired or limited vision, limited hand and finger mobility or dexterity, etc.

Building Effective Websites

Hours: 40–60

Sample learning objectives

- Describe the comparative advantages and disadvantages of most commonly used web design tools, such as WordPress, Visual Studio Code and Figma and demonstrate the ability to create a basic website using one or more of these tools.
- Demonstrate the ability to use HTML to build content for a basic website.
- Create Cascading Style Sheets and create rules to elevate website style and design.
- Develop a website advertising a product or service, implementing a survey, and providing educational information using WordPress, Visual Studio Code and/or Figma.
- Describe the benefits and demonstrate the ability to use GitHub to retrieve and store code and to participate in a coding community.
- Demonstrate the ability to use basic JavaScript code to embed interactive content into a website.
- Discuss the importance of Search Engine Optimization tools to increase website traffic.
- Explain the components or features of a website that increase traffic to a website.

Artificial Intelligence

Hours: 20–35

Sample learning objectives

- Explain how Artificial Intelligence (AI) is currently, and in the future can or might be, used to optimize web design.
- Discuss the use of AI to create a cohesive look and message across a website.
- Demonstrate the ability to use AI to format a website.
- Explain how AI can be built into a website to customize the user experience.
- Demonstrate the ability to use AI to generate content and images for websites.
- Discuss the ethical use of AI in web design and consumer interactions.
- Demonstrate the ability to use AI to engage in search engine optimization through the use of key words, headlines and content.
- Demonstrate the ability to create an effective chatbot feature for a website.
- Demonstrate the ability to use AI to monitor web traffic and effectiveness.

Accessible Design

Hours: 35–45

Sample learning objectives

- Identify the purpose in establishing web accessibility standards and outline the key elements of the Web Code Accessibility Guidelines (WCAG) established by W3C.
- Describe and demonstrate the ability to follow the Authoring Tool Accessibility Guidelines established by W3C.
- Describe and demonstrate the ability to follow or employ the User Agent Accessibility Guidelines established by W3C.
- Explain the principles of web accessibility as defined by WCAG including that websites should be perceivable, operable, understandable, and robust.
- Describe the types of assistive devices, tools and technologies commonly used by individuals with disabilities to effectively interact with web content.
- Discuss strategies for developing websites, including through the use of HTML tags, that support the use of assistive devices and technologies
- Demonstrate the ability to work as part of a team of web designers, web developers and web accessibility testers to create effective websites that comply with federal laws and regulations.

Relevant military experience

1D7X1Z—US Air Force, Computer Systems Programmer

Occupational Demographics

34.8 percent of web and digital interface designers are women and 65.2 percent are men.

The majority of web and digital interface designers are white (70.2 percent), 10.6 percent are Hispanic or Latino, 10.4 percent are Asian, and the remaining 5 percent are unknown.

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STATEMENT OF INDEPENDENCE

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