RANKEN
TECHNICAL COLLEGE

Course Information
Course Number: IWT 1229
Course Name: Web Development and Design Foundation

Credit-By-Assessment (CBA) Competency List
Written Assessment Competency List

Introduction to the Internet and World Wide Web
- Describe the evolution of the Internet and the Web.
- Explain the need for web standards.
- Describe Universal Design.
- Identify benefits of accessible web design.
- Identify reliable resources of information on the Web.
- Identify ethical use of the Web.
- Describe the purpose of web browsers and web servers.
- Identify networking protocols.
- Define URIs and domain names.
- Describe HTML, XHTML, and HTML5.
- Describe popular trends in the use of the Web.

HTML Basics
- Describe HTML, XHTML, and HTML5.
- Identify the markup language in a web page document.

Configuring Color and Text
- Describe the evolution of style sheets from print media to the Web.
- List advantages of using Cascading Style Sheets.
- Create style sheets that configure common color and text properties.
- Configure element, class, id, and contextual selectors.

Web Design
- Describe the most common types of website organization.
- Describe principles of visual design.
- Design for your target audience.
- Improve the readability of the text on your web pages.
- Use graphics appropriately on web pages.
- Apply the concept of universal design to web pages.
- Describe web page layout design techniques.

Forms
- Describe common uses of forms on web pages.
- Configure new HTML5 form controls including the email, URL, data list, range, spinner, calendar, and color controls.
- Describe the features and common uses of server-side processing.
- List where to free server-side processing resources on the Web.

Web Development
- Identify other common system development methodologies.
- Describe the activities in the Conceptualization, Analysis, Design, Production, Testing, Launch, Maintenance, and Evaluation stages of a website project. Compare the goals of the website to the results as part of the Evaluation phase.

E-Commerce
- Define e-commerce.
- Identify benefits and risks of e-commerce.
- Describe e-commerce business models.
- Describe e-commerce security and encryption.
- Define Electronic Data Interchange (EDI).
- Identify trends and projections for e-commerce.
- Describe issues related to e-commerce.
- Describe options for order and payment processing.

Web Promotion
- Identify commonly used search engines and search indexes.
- Describe the components of a search engine.
- Design web pages that are friendly to search engines.
- Submit a website for inclusion in a search engine or search directory.
- Monitor a search engine listing.
- Describe other website promotion activities.

Introduction to JavaScript
- Describe how JavaScript to your web page.
- Understand basic JavaScript code.
- Explain the structure JavaScript code.
- Describe how to create a JavaScript source file.
- List where to validate JavaScript code.

RANKEN
TECHNICAL COLLEGE

Work with Functions, Data Types, and Operators
- Define functions.
- Describe Data Types.
- Explain Arithmetic, Assignment, Special, and Comparison and Conditional Operators.

Build Arrays and Control Structures
- Describe how to modify and access an array.
- Explain decisions using conditional statements.
- Define code with while, do while, and for loops.

Manipulate the Browser Object Model
- Explain the BOM using the Window object.
- Reference JavaScript objects.
- Understand the Document object.
- Explain the History, Locator, Navigator, and Screen object.

Validate Form data with JavaScript
- Describe the different input fields.
- Explain the purpose selection lists.
- Describe why we validate data.

Use object orientated JavaScript
- Describe custom JavaScript objects.
- List functions of Date, Number, and Math classes.

Manipulate Data in Strings and Arrays
- Describe Formatting Strings, Count Characters in a String, Find and extract characters and substrings.
- Explain Regular Expressions.
- Explain how to convert between strings and arrays.

Debugging and Error Handling
- Explain types of errors.
- List basic debugging techniques.
- List trace errors with debugging tools.
- Explain how to Set Breakpoints.
- Explain how to Step through your scripts.

Maintain State information and security
- Describe how to Save State with Hidden form fields.
- Describe how to Save State with query strings.
- Describe how to Save State with cookies.
- List security issues.

Hands-on Assessment Competency List
HTML Basics
- Configure the body of a web page with headings, paragraphs, line breaks, divs, lists, and block quotes.
- Configure text with phrase elements.
- Configure special characters.
- Use the anchor element to link from page to page.
- Create absolute, relative, and e-mail hyperlinks.
- Code, save, and display a web page document.
- Test a web page document for valid syntax.
- Use the html, head, body, title, and meta elements to code a template for a web page.

Configuring Color and Text
- Use color on web pages.
- Apply inline styles.
- Use embedded style sheets.
- Use external style sheets.
- Utilize the "cascade" in CSS.

Web Design
- Create and format lines and borders on web pages.
- Apply the image element to add graphics to web pages.
- Optimize an image for web page display.
- Configure images as backgrounds on web pages.
- Configure images as hyperlinks.
- Configure visual effects with CSS3 including multiple background images, rounded corners, box shadow, text shadow, opacity, and gradients.
- Configure RGBA color with CSS3.
- Use HTML5 elements to caption a figure.
- Use the HTML5 meter and progress elements.
- Find free and fee-based graphics sources.
- Follow recommended web design guidelines for graphics on web page.

RANKEN
TECHNICAL COLLEGE

Page Layout
- Apply best practices of web design.
- Create clear, easy-to-use navigation.
- Code relative hyperlinks to web pages in folders within a website.
- Configure a hyperlink to a named fragment internal to a web page.
- Configure images with CSS sprites.
- Configure a three-column page layout using CSS.
- Configure CSS for printing.
- Configure CSS for mobile display.
- Utilize CSS3 media queries to target mobile devices.

Forms
- Create forms on web pages using the form, input, text area, and select elements.
- Create forms that provide additional accessibility features using the access key and tab index attributes.
- Associate form controls and groups using the label, field set, and legend elements.
- Create custom image buttons and use the button element.
- Use CSS to style a form.

Server Side Logic
- Invoke server-side processing to handle form data.
- Describe the skills, functions, and job roles needed for a successful web project development.
- Utilize the stages in the standard System Development Life Cycle.
- Apply the System Development Life Cycle to web development projects.
- Find the right web host provider for your website.
- Choose a domain name for your website.

Introduction to JavaScript
- Add JavaScript to your web page.
- Write basic JavaScript code.
- Structure JavaScript code.
- Create a JavaScript source file.
- Write valid JavaScript code.

Work with Functions, Data Types, and Operators
- Define and call functions.
- Understand Data Types.
- Use Arithmetic, Assignment, Special, and Comparison and Conditional Operators.

RANKEN
TECHNICAL COLLEGE

Build Arrays and Control Structures
- Declare, modify, and access an array.
- Make decisions using conditional statements.
- Repeat code with while, do while, and for loops.

Manipulate the Browser Object Model
- Manipulate the BOM using the Window object.
- Reference JavaScript objects.
- Understand the Document object.
- Work with History object.
- Work with the Locator object.
- Work with the Navigator object.
- Work with the Screen object.

Validate Form data with JavaScript
- Work with input fields.
- Create selection lists.
- Validate submitted data.

Use object orientated JavaScript
- Declare, modify, and access an array.
- Make decisions using conditional statements.
- Repeat code with while, do while, and for loops.
- Define custom JavaScript objects.
- Use Date, Number, and Math classes.

Manipulate Data in Strings and Arrays
- Formatting Strings, Count Characters in a String, Find and extract characters and substrings.
- Replace characters and substrings.
- Work with Regular Expressions.
- Manipulate Arrays.
- Convert between strings and arrays.

Debugging and Error Handling
- Understand types of errors.
- Use basic debugging techniques.
- Trace errors with debugging tools.
- Set Breakpoints.
- Step through your scripts.

RANKEN

TECHNICAL COLLEGE

Maintain State information and security

- Save State with Hidden form fields.
- Save State with query strings.
- Save State with cookies.
- Understand security issues.