

# Next Generation Higher National Unit Specification

## Web Development (SCQF level 7)

**Unit code:** J6BB 47

**SCQF level:** 7 (16 SCQF credit points)

**Valid from:** session 2022–23

### **Prototype unit specification for use in pilot delivery only (version 1.0) May 2022**

This unit specification provides detailed information about the unit to ensure consistent and transparent assessment year on year.

This unit specification is for teachers and lecturers and contains all the mandatory information required to deliver and assess the unit.

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## Unit purpose

This is a non-specialist unit, designed for learners with an interest in application and web development. It is particularly suitable for learners with a vocational interest in front-end web development and for those with an interest in back-end or full-stack web development. No previous experience of web development is assumed, but numeracy and literacy skills are expected.

This unit introduces learners to current, standard, front-end web technologies. They gain an understanding of the importance of the user experience (UX), the user interface (UI) and search engine optimisation (SEO).

Learners are introduced to:

- ◆ standard HTML used to structure web pages
- ◆ CSS used to enhance web design
- ◆ basic JavaScript constructs to enable interactivity using simple document object model (DOM) manipulation

They develop an understanding of the end user and the implication of having a thoughtful user interface, coding on-page for optimum SEO, and testing both during and at the end of the development.

On completion of this unit, learners can progress to the Web Development unit at SCQF level 8.

## Unit outcomes

Learners who complete this unit can:

- 1 analyse a brief, requirements, and design documentation for a website
- 2 code a website in HTML, CSS, and JavaScript, applying best practice
- 3 test a website for functionality, performance and usability
- 4 publish a website to a web server

## Evidence requirements

This unit requires only product evidence.

Learners' product evidence is a completed, tested, front-end website, designed and coded to recognised current standards using HTML, CSS and JavaScript.

Underpinning knowledge is inferred from the completed product evidence.

Learners interpret a brief, requirements and design documentation, then develop their website by coding in HTML, CSS and JavaScript. They should thoroughly test their website, documenting their results for functionality, performance and end-user testing, and publish to a web server.

Content produced by learners should include web copy and graphics. The design documentation should include:

- ◆ a style guide giving details of acceptable fonts and colours
- ◆ wireframes indicating the layout for small and large screen
- ◆ the internal structure and navigation map

The completed website should demonstrate clean, standards compliant, internally documented code with on-page SEO. It should be fully functional and responsive across modern browsers and devices, and match the user interface specified in the design documentation.

Learners can develop evidence over an extended period and under lightly controlled conditions.

The standard of evidence should be consistent with the SCQF level of this unit.

## Knowledge and skills

The following table shows the knowledge and skills covered by the unit outcomes:

Knowledge	Skills
<p>Learners should understand:</p> <ul style="list-style-type: none"> <li>◆ web development process</li> <li>◆ web development tools</li> <li>◆ the difference between websites and web apps</li> <li>◆ HTML semantic and non-semantic elements</li> <li>◆ HTML attributes</li> <li>◆ CSS rules</li> <li>◆ CSS selectors</li> <li>◆ CSS properties</li> <li>◆ basic modern JavaScript constructs</li> <li>◆ the relationship between the HTML DOM and JavaScript</li> <li>◆ the importance of learning JavaScript in terms of libraries and frameworks</li> <li>◆ the importance of UI design and the UX</li> <li>◆ on-page SEO techniques</li> <li>◆ modern browsers and web standards</li> <li>◆ testing methods</li> <li>◆ types of web hosting</li> </ul>	<p>Learners can:</p> <ul style="list-style-type: none"> <li>◆ interpret a brief</li> <li>◆ interpret requirements</li> <li>◆ interpret a style guide</li> <li>◆ interpret wireframes</li> <li>◆ code semantic HTML to current recognised standards</li> <li>◆ code CSS for styling and layout to current recognised standards</li> <li>◆ code basic JavaScript to enable DOM manipulation</li> <li>◆ apply best practices in responsive design and progressive enhancement</li> <li>◆ undertake cross-browser development</li> <li>◆ implement basic on-page SEO</li> <li>◆ implement UX and UI design</li> <li>◆ conduct debugging and testing</li> <li>◆ carry out end-user testing</li> <li>◆ publish a website to a web server</li> </ul>

## Meta-skills

Throughout the unit, learners develop meta-skills to enhance their employability in the computing sector.

### Self-management

These meta-skills include:

- ◆ focusing: sorting, attention
- ◆ adapting: self-learning

### Social intelligence

These meta-skills include:

- ◆ communicating: giving information
- ◆ collaborating: social perceptiveness

### Innovation

These meta-skills include:

- ◆ curiosity: questioning, problem recognition
- ◆ creativity: visualising
- ◆ sense-making: analysis
- ◆ critical thinking: logical thinking

## Literacies

Throughout this unit, learners have opportunities to develop their literacy skills.

### Numeracy

This unit contributes to numeracy skills, which are necessary for responsive and efficient loading. Developed through coding CSS and JavaScript, they include calculation of:

- ◆ viewport height and width
- ◆ percentages
- ◆ CSS grids
- ◆ margins and padding
- ◆ image dimensions

## **Communication**

Learners develop communication skills during testing and through collaboration and presentations.

## **Digital**

This unit contributes significantly towards digital skills.

## Delivery of unit

You can deliver this unit on its own or as part of a group award. If it is delivered as part of a group award, you can combine assessment with other units in the award.

You can deliver it along with the User Interface Design unit at SCQF level 7 and the Web Technologies 1: HTML and CSS unit at SCQF level 7.

Using the User Interface Design unit for teaching the UI and UX element of this unit, the design documentation produced by the learner could be used as an alternative to the one you provide, if the same project brief is used.

The Web Technologies 1: HTML and CSS unit focuses on HTML and CSS only. It allows more time for consolidation of these languages and additional time for JavaScript. The assessment evidence for Web Technologies 1: HTML and CSS can be inferred from the evidence requirements.

The time required for each outcome varies depending on both the previous experience of individual learners and if you are delivering this unit along with other related units.

We suggest the following distribution of time:

**Outcome 1** — Analyse a brief, requirements, and design documentation for a website  
(10 hours)

**Outcome 2** — Code the website in HTML, CSS, and JavaScript, applying best practice  
(50 hours)

**Outcome 3** — Test the website for functionality, performance and usability  
(14 hours)

**Outcome 4** — Publish the website to a web server  
(6 hours)

## Additional guidance

The guidance in this section is not mandatory.

Learners with no previous experience of web development need a significant level of knowledge and skills to carry out larger practical activities. We recommend that you provide learners with examples and tutorials to allow them to become competent using HTML, CSS and basic JavaScript before they carry out any large practical tasks.

There are free coding editors widely available. These are also used professionally and are more than sufficient for coding front-end web development using HTML, CSS and JavaScript. We recommend Visual Studio Code, Atom and Sublime Text, all of which are lightweight and easy to install. A variety of modern browsers is required for testing.

You should:

- ◆ Introduce learners to semantic and non-semantic HTML elements and attributes to allow them to build the structure of a website from a wireframe.
- ◆ Introduce learners to CSS rules, CSS selectors and CSS properties to allow them to style HTML elements and classes for visual appearance, layout and responsiveness.
- ◆ Introduce learners to the basic constructs of JavaScript and how it interacts with HTML.
- ◆ Emphasise the importance of UX and cover how it is affected by the UI design. You should cover the fundamentals of SEO so that learners understand the importance of having clean, valid HTML, using the correct HTML elements and including keywords in them.
- ◆ Encourage continual testing on browsers and devices while developing and emphasise the importance of functionality, performance and end-user testing before the website goes live.

## Approaches to assessment

You can use an assignment that requires learners to interpret a given brief or requirements and associated design documentation as an assessment. From this, learners code and test a front-end website using HTML, CSS and JavaScript. The completed website should demonstrate clean, standards compliant, documented code and implemented on-page SEO. The website should be fully functional and responsive across modern browsers and devices. They should document the results of their testing, including functionality, performance and end-user testing.

Learners should start their assignments when they are competent in coding HTML, CSS and JavaScript to the required standard, and they have sufficient knowledge of SEO, UI, UX and how to interpret a brief or requirements and design documentation.

On completion of this unit, learners can progress to the Web Development unit at SCQF level 8.



## **Equality and inclusion**

This unit is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

You should take into account the needs of individual learners when planning learning experiences, selecting assessment methods or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and/or those with additional support needs is available on the assessment arrangements web page:

[www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements).

## Information for learners

### Web Development (SCQF level 7)

This section explains:

- ◆ what the unit is about
- ◆ what you should know or be able to do before you start
- ◆ what you need to do during the unit
- ◆ opportunities for further learning and employment

### Unit information

This unit introduces you to front-end web development.

You learn current, standard, front-end web technologies and gain an understanding of the importance of the user experience (UX), the user interface (UI) and search engine optimisation (SEO).

The front-end web technologies you learn include:

- ◆ standard HTML used to structure web pages
- ◆ CSS used to enhance the design
- ◆ basic JavaScript, used to add interactivity by manipulating HTML and CSS

You develop an understanding of the end user and the importance of having a thoughtfully designed user interface.

Having Google or Bing (or any other search engine) find your website is extremely important, so you learn the basics of SEO and how to implement it into your website.

You also learn about the importance of testing, and carry out testing both during and at the end of the development process.

The assessment for this unit takes the form of a project. You receive a website brief and design from which you plan, code, test and upload a website to a web server.

This unit provides the fundamental knowledge and skills required by any web designer or developer, and from here you can move on to more advanced web development units, such as those specialising in back-end web development. It is also useful if you want to study a unit in content management systems or software development.

NextGen: HN published prototype unit specification for use in pilot delivery only (version 1.0)  
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A wide range of meta-skills and literacies are covered. The meta-skills you develop cover self-management, social intelligence, and innovation. For example, you improve your self-management skills by decision-making when planning a website based on a brief.

You also develop your numerical, communication and digital skills, particularly your digital literacy.

On completion of this unit, you can progress to various related subjects at SCQF level 8.

# Administrative information

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**Superclass:** CB

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## History of changes

Version	Description of change	Date

Note: please check [SQA's website](#) to ensure you are using the most up-to-date version of this document.