Unit title	Unit 6: Website Development
Guided learning hours	60
Number of lessons	30
Duration of lessons	2hrs
Links to other units	

- Unit 1: Information Technology Systems – Strategy, Management and Infrastructure
- Unit 3: Using Social Media in Business
- Unit 4: Programming
- Unit 7: Mobile Apps Development
- Unit 11: Cyber Security and Incident Management
- Unit 12: IT Technical Support and Management
- Unit 14: Customising and Integrating Applications
- Unit 15: Cloud Storage and Collaboration Tools
- Unit 16: Digital 2D and 3D Graphics
- Unit 17: Digital Animation and Effects

Key to learning opportunities			
AW	Assignment writing	**PA**	Preparation for assessment
GS	Guest speaker	**V**	Visit
IS	Independent study	**GW**	Group work

Lesson	Topic	Lesson type	Suggested activities	Classroom resources
— Learning aim A: Understand the principles of website development					
1	**A1 Purpose and principles of website products** ● Purpose of websites	GW	● **Tutor presentation:** Introduce the unit, detailing the main content areas and explaining the types of assessment. ● **Small group activity:** Learners list the different websites they use, then try to group them by type of site. ● **Tutor-led discussion:** Consider the types of websites learners use and how they grouped the sites in the previous activity. Introduce the different purposes of websites (e.g. Are they product or service based? What type of audience are they aimed at?). ● **Tutor presentation:** Show a series of websites and encourage learners to identify the target audience(s) for each site. Introduce the concept of user requirements for website design. ● **Homework:** Learners research and create an information leaflet explaining what Web 2.0 is and giving examples of Web 2.0 websites.	● Tutor presentation ● Specification ● Example websites

2	**A1 Purpose and principles of website products**
	● Principles of website design
		GW
		GS
			● **Tutor presentation:** Introduce the principles of website design, including:
			  ○ usability, white space, site layout, accessibility, spacing, navigation, typography, alignment, clarity, consistency, simplicity etc.
			  ○ the use of media and objects on sites.
			● **Small group activity:** Give learners a series of websites to look at and ask them to review each site against the list of principles of website design. Learners should also consider how media and objects have been used on the sites (e.g. position, colour, contrast, size, appropriateness). Give each group a different set of sites, then ask groups to present their findings to the class.
				● Tutor presentation
				● Computers with internet access
				● List of websites
				● Guest speaker

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			● **Guest speaker:** Invite a guest speaker to talk about the elements surrounding creativity and innovation when designing websites (as covered in the specification) – e.g. unconventional layouts, white space, 'outside the box' thinking and the golden ratio. ● **Homework:** Learners research search engine optimisation (SEO) and create a poster for display in class. They should consider indexing (meta tags), use of keywords, importance of updates, and limiting crawling.	
3	**A2 Factors affecting website performance** ● Scripts and browsers	GW IS	● **Tutor-led discussion:** Introduce the concept of local and server-side scripts. See if learners can identify where they have encountered different versions of these scripts while browsing the web. Discuss the impact on website performance of where scripts are run (i.e. on the web server – server-side scripts, or on the client machine – client-side scripts). ● **Tutor presentation:** Introduce the concept of browser compliance and how different sites can be displayed differently if they are not compliant. Discuss the elements that can be used to make a web page and which elements are supported by different browsers. ● **Individual activity:** Learners use a range of devices and browsers to test the browser compliance of a series of websites. They document their findings and present them to the class.	● Tutor presentation ● Computers with internet access ● Sample devices and browsers ● List of websites

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4	**A2 Factors affecting website performance** ● Server-side factors ● Client-side factors	GW	● **Tutor presentation:** Introduce the range of server and client-side factors that can affect website performance. Where possible, use real-life examples relevant to learners. 　○ Server-side factors: bandwidth availability, number of hits, file types etc. 　○ Client-side factors: upload and download speeds, browser, cache memory, processor speed, interactivity etc. ● **Individual activity:** Learners create a blog post on the ways in which different factors affect a website's performance.	● Tutor presentation ● Computers with internet access ● Blogging software (optional)
5–6	**Learning aim A**	AW	● **Summative assessment activity:** Learners work individually on assignment tasks for learning aim A. You may use the Pearson set assignment brief for this task.	● Pearson set assignment brief
Learning aim B: Design a website to meet client requirements				
7	**B1 Website design** ● Problem definition ● Purpose requirements ● Application of design principles	GW IS	● **Tutor presentation:** Introduce problem definition statement requirements, then apply them to a range of websites. Consider the intended audience of a site, a full summary of the problem to be solved, constraints, benefits, nature of interactivity, and website complexity. This will enable learners to more clearly understand the importance of outlining these requirements. ● **Tutor-led discussion:** Consider a range of predeveloped scenarios (e.g. local small-scale business, large multinational business etc.). Work with learners to produce a suitable problem definition statement for each scenario. Ensure the scenarios used offer a suitable range of requirements for the criteria outlined in the specification (i.e. intended audience, problem to be solved, constraints, benefits, nature of interactivity, website complexity).	● Tutor presentation ● Computers with internet access ● Sample websites to consider ● Range of scenarios

Lesson	Topic	Lesson type	Suggested activities	Classroom resources
			● **Individual activity:** Give each learner a scenario for the design of a site and ask them to create an outline specification. ● **Tutor-led discussion:** Learners share their ideas from the individual activity. Guide the class to offer constructive feedback and build on each other's ideas.	
8	**B1 Website design** ● Initial design ideas and prototypes	GW	● **Tutor presentation:** Introduce the concept of creating prototypes when designing a website and discuss the tools available. ● **Tutor-led practical activity:** Give learners an imagined brief for an interactive website design for a company. In groups encourage learners to explore rough designs before moving on to use digital tools. ○ When outlining their design ideas, learners should explore the full range of illustrative tools that can be used, including storyboards, mood boards, wireframes and site maps. They should use and compare paper-based and digital versions of these tools. ○ Once they have created rough/initial designs, learners should develop their ideas to create more realistic representations of the planned sites. Emphasise the importance of this step. ○ Ensure learners appreciate the benefits of producing multiple designs for consideration before progressing with the design process. ○ When creating prototypes, learners should consider search engine optimisation and compatibility with mobile/tablet devices.	● Tutor presentation ● Website design brief ● Design tools/software ● Prototyping tools/software

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9	**B1 Website design**
	● Client-side scripting
	● Use of assets
		GW	● **Tutor presentation:** Introduce the range of tools and techniques used to design client-side scripting. Use scenarios to demonstrate the tools and techniques used for scripting design (e.g. pseudocode, flow charts (including British Computer Society (BCS) symbols) etc.).
			● **Small group activity:** Give each group an outline scenario that will allow them to practise using the tools and techniques covered in the presentation. Learners then explain to the class how they used these techniques to develop a solution.
			● **Tutor presentation:** Introduce the range of assets that can be used on websites (e.g. digital animation, digital graphic, digital audio and video, any other combined assets). Discuss where assets come from (ready-made or original) and when different types of asset are appropriate.
			● **Tutor-led discussion:** Discuss the role of feedback in the design process and consider how feedback can be:
			   o gathered
			   o used to refine developed designs
			   o used to make decisions about future steps.
			● **Small group activity:** Give each group a different website and ask them to explore the home page, identifying the types of asset used.
			● **Tutor-led discussion:** Consider effective use of assets. You could show a site with asset overload (too much content) to demonstrate what not to do.
				● Tutor presentation
				● Scenarios to demonstrate design tools
				● Computers with internet access
				● Scenarios for group activity
				● List of websites

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10	**B1 Website design** ● Technical and design constraints ● Legal and ethical considerations	IS	● **Tutor presentation:** Introduce possible design and technical issues learners may encounter when designing a website and discuss how these issues may be resolved. ● **Individual activity:** Learners research legal requirements related to websites in different countries/regions. ● **Tutor-led discussion:** Learners share their research findings. Ensure all relevant legislation has been covered.	● Tutor presentation ● Research materials including internet access ● List of legal requirements
11	**B2 Common tools and techniques used to produce websites** ● HTML, HTML5 and updates ● Site components	IS/GW	● **Tutor presentation:** Introduce the tools used to produce websites. ● **Individual/small group activity:** Learners visit a range of HTML5 websites and identify the features available as part of the framework. They share their findings with the class. ● **Tutor presentation:** Explain how and why HTML is updated. Share practical examples of websites where different elements have been used (e.g. tables, form features, navigation features and interactive elements). ● **Homework:** Learners choose a website and prepare a short presentation on how the website designers have used the features discussed in this session.	● Tutor presentation (you may wish to refer to the HTML5 intro on the W3C website) ● Computers with internet access ● HTML5 websites
12	**B2 Common tools and techniques used to produce websites** ● Templates ● Colour schemes ● CSS ● Accessibility features	IS	● **Tutor presentation:** Introduce the concept of colour schemes and templates and discuss how they are applied on websites in real-life settings. Introduce the concept of Cascading Style Sheets (CSS) and demonstrate how CSS can be used, both internally and externally, to control elements such as background colour, background images, text formatting, borders, padding, heading styles and element position. ● **Individual activity:** Allow learners to manipulate some CSS, either on a suitable sample website or via the W3schools' page on CSS.	● Tutor presentation ● Computers with internet access ● W3schools' page on CSS ● Blogging software (option)

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			This will allow them to see CSS in action and better understand its application. ● **Tutor-led discussion:** Discuss what accessibility is and what this means in terms of website design. ● **Individual activity:** Learners produce a blog post on design features that improve accessibility (such as alternative tags, zoom features and text-to-speech). ● **Homework:** Learners research W3C compliance and produce a poster to present in the next session.	

13	**B2 Common tools and techniques used to produce websites**
	 ● Platform compatibility
	 ● Suitable file types
		GW
		 IS
			● **Tutor-led discussion:** Consider platform compatibility. Encourage learners to consider different design principles and how they appear on different platforms.
			 ● **Tutor presentation:** Introduce:
			    o the tools available to compress and export different files for use on websites
			    o the different types of multimedia and assets that can be directly embedded into sites (e.g. digital animation, digital graphics, digital audio, digital video).
			 ● **Individual activity:** Learners experiment with exporting a range of assets.
				● Tutor presentation
				 ● Computers with internet access
				 ● Different devices to test compatibility

Learning aim C: Develop a website to meet client requirements				

14	**C5 Skills, knowledge and behaviours**
	 ● Planning
	 ● Reviewing
	 ● Evaluating
		GS
		 IS
			● **Tutor presentation:** Summarise the key elements of this unit so far, including:
			    o planning (setting targets, reviewing timescales, considering sources of feedback)
			    o reviewing (knowledge and checks, using feedback from others).
				● Tutor presentation
				 ● Guest speaker
				 ● Research materials,

Lesson	Topic	Lesson type	Suggested activities	Classroom resources
			Then introduce: o key behaviours required when implementing websites (professionalism, impact on outcomes, being supportive etc.) o the importance of evaluation (gaining insights from own performance). ● **Guest speaker(s):** If possible, arrange for one or two guest speakers to confirm the importance of these skills. (Two guest speakers from different backgrounds will also demonstrate the importance of these skills in a range of employment settings.) ● **Individual activity:** Learners begin compiling material for the report they must produce for assessment, evaluating the design of their website against the client requirements. This review could take the form of a short reflective report or presentation.	including internet access
15	**C1 Client-side scripting languages** ● Theory	GW IS	● **Tutor presentation:** Recap the uses of client-side scripts on websites. Consider how they can be used to provide extra features in terms of usability and interactivity (e.g. alerts, confirming choices, browser detection, rollovers, checking/ validating input, handling forms, etc.). ● **Small group activity:** Give each group a type of scripting language (e.g. JavaScript, VB script) to research. They should consider the features and uses of the language, then present their research to the class. ● **Tutor presentation:** Introduce the constructs used when developing scripts. Consider syntax loops, decision making, functions, parameter passing, handling events, methods etc. (There may be some overlap with any programming units learners are studying.)	● Tutor presentation ● List of scripting languages ● Research materials including internet access ● Presentation software (optional) ● Examples of coding constructs

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			● **Individual activity:** Allow learners to explore and experiment with scripts. The W3schools JavaScript page provides numerous examples and allows learners to interact with live scripts. ● **Note:** It may be beneficial to repeat/practise elements covered earlier in Learning aim C. This will ensure learners maintain these skills, ready to apply in their assessments.	● W3schools JavaScript page
16	**C1 Client-side scripting languages** ● Practical	IS	● **Tutor presentation:** Revise the constructs used when developing scripts, then introduce learners to the practical application of scripts. You could do this via a range of scenarios where scripts might be used (e.g. requiring a site visitor to enter their age before proceeding, checking a form, etc.). Use the W3schools JavaScript page to demonstrate how these elements are coded. ● **Individual activity:** Give learners a range of activities that will allow them to use scripting languages for a range of purposes – e.g. alerts, confirming choices, browser detection, creating rollovers, validating input and handling forms.	● Tutor presentation ● Range of scenarios ● Computers with internet access ● W3schools JavaScript page
17–19	**C2 Website development** ● Use of CSS/HTML 1	IS	● **Tutor presentation:** Revise the tools and techniques learners will use when developing their websites and discuss how to implement them effectively. ● **Individual activity:** Learners engage in web development activities. Introduce the structure of basic sites using tags (HTML, BODY etc.). You may wish to start simply, allowing learners to create a very basic website template with text, before asking them to develop simple websites to meet a variety of briefs.	● Tutor presentation ● Computers with internet access ● Briefs for website development activities

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20–22	**C2 Website development**
	● Use of CSS/HTML 2)
		GW
		IS
			● **Tutor presentation:** Introduce the development of more advanced HTML tags (styling and layout).
			● **Individual/small-group activity:** Guide learners to practise using CSS. A typical activity could involve:
			   ○ creating a basic site with two-way navigation
			   ○ using in-line styling to style elements
			   ○ removing in-line styling and placing it in a CSS file.
			This approach (showing what not to do and how to improve) will help learners to recognise the benefits of using features such as CSS.
			● **Tutor demonstration:** Show learners how to test compatibility with mobile devices, either by showing sites on different physical devices or by using a compatibility checker on a browser such as Chrome.
			● **Individual activity:** Learners use CSS to develop a website that meets a specific brief.
				● Tutor presentation
				● Computers with internet access
				● Suitable HTML coding package
				● Mobile devices or Chrome browser
				● Website briefs

23	**C2 Website development** ● Browsers and servers	GW	● **Individual activity:** Learners use the skills they have developed so far to create basic website templates and test them on different browsers. ● **Tutor presentation:** Introduce the practical element of uploading files to a server. If possible, set up a specific web space within your centre for upload, or purchase hosting space. ● **Individual activity:** Learners practise uploading files to a server.	● Computers with internet access ● Suitable HTML coding package ● Server space or local hosting via software such as XAMPP

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24	**C3 Website review**	GW	● **Tutor presentation:** Introduce the concept of critically reviewing your own work (as opposed to the work of others). Consider elements such as:
			  o comparison with similar sites
			  o assessment of suitability – Is the site suitable for its intended purpose and audience? Have the client requirements been met, including optimisation?
			  o legal and ethical considerations
			  o strengths of the site
			  o areas that could be improved.
			● **Individual activity:** Give learners a real website to review, to practise their critical evaluation skills against these criteria.
			● **Tutor-led discussion:** Learners share their review findings.
				● Tutor presentation
				● Computers with internet access
				● Websites for review

25	**C4 Website optimisation**
	● Methods
		GW	● **Tutor presentation:** Introduce methods of testing sites, including:
			  o performance and user testing
			  o checking compatibility
			  o checking interactivity
			  o obtaining feedback from others.
			● **Tutor-led discussion:** Work with the class to create a test plan which learners will use to test websites in the next activity.
			● **Individual activity:** Learners use the test plan to test a range of websites for performance issues.
			● **Small group activity:** Learners create a questionnaire that could be used to gather user feedback for a website. Groups can then compare the types of questions used and the elements they asked users to look at.
				● Tutor presentation
				● Computers with internet access
				● Websites for review

Lesson	Topic	Lesson type	Suggested activities	Classroom resources
			● **Tutor presentation:** Explain that testing is the precursor to refining websites and making further improvements.	
26–30	**Learning aim B/C**	AW	● **Summative assessment activity:** Learners work individually on assignment tasks for learning aims B and C. You may use the Pearson set assignment brief for this task.	● Pearson set assignment brief

Pearson is not responsible for the content of any external internet sites. It is essential for tutors to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that tutors bookmark useful websites and consider enabling learners to access them through the school/college intranet.