Unit 59: Web Authoring

Unit code: A/600/6697

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

The aim of this unit is to develop understanding of how websites are created, and to provide skills in the process of web authoring. Learners will achieve this through studying existing websites, planning, producing and testing a website and reflecting on their work.

Unit introduction

Websites, social media and apps are part of our eveyday lives. Web designers and developers are continually innovating and developing new ways for users to access information and interact with the worldwide web. The growth in the use of mobile devices has meant that websites are now more user-friendly and responsive than ever before. Shopping habits have also changed with savvy users making use of online product reviews, ratings, price comparison tools and online auctions to make sure they get the best deals. The exciting thing is that the internet is still a developing, evolving medium with plenty of scope for individual expression, innovation and creativity.

This unit provides knowledge, skills, understanding and practical experience for learners in authoring for the worldwide web. It will provide learners with core knowledge and skills appropriate to a wide range of jobs classified under the broad title of web authoring including web page design, website development, testing and planning.

Learners will develop an understanding of the concepts and terminology related to web authoring. They will also learn the basics of website design and about the tools and features of web authoring software. Learners will touch on other important issues such as accessibility, loading times and responsiveness. The unit will also help learners identify the personal development required to pursue a career in web development.

Learning outcomes

On completion of this unit a learner should:

1 Understand common web coding protocols

2 Be able to devise a structured website

3 Be able to use web authoring tools to produce, publish and test a media-rich website to a specification.

Unit content

1 Understand common web coding protocols

Web page: web page construction; text; fonts; colour; images; hyperlinks; language and terminology; metadata; frameworks

HTML: nature of HTML (hypertext markup language) and XHTML (extensible hypertext markup language); features of HTML and XHTML; how to use HTML and XHTML; semantic HTML

Cascading style sheets: nature of cascading style sheets (CSS); features of CSS; how to use CSS

Terminology: authoring; sites; uploading; file transfer protocol (FTP); interactivity; JavaScript; native apps; web and hybrid apps; user experience (UX)

2 Be able to devise a structured website

Components of production: client's requirements; audience considerations; generation of ideas; conceptualisation; visualisation; information architecture; storyboarding; sitemap; resources; creating and sourcing assets; wireframes; page mock ups; prototyping

Planning: importance of planning; time management; deadlines

Production: adhering to schedule; teamwork and management of resources; liaison with client

Professionalism: meeting deadlines; client negotiation; quality management; team-working; liaison with client; working to the client's brief; presentations

Site management: purposes of site management; uses of site management; site maps; local and remote sites; connections; copying; synchronisation

Website or app specification: client needs; audience; site map; visual style, eg colour, style, composition; typography; technical considerations

3 Be able to use web authoring tools to produce, publish and test a media-rich website to a specification

Tools and features: HTML (templates, head element, navigation, lists, links, text, page components eg, images, tables, forms, audio and video); CSS (frameworks, layout, CSS animation, CSS box model, styling web pages and apps, layout); JavaScript (interactivity); responsive design techniques; frameworks

Accessibility: alt text; shortcut keys; skip keys; colours and contrast; use of validation tools

Search engine optimisation: meta tags; search engine ranking algorithms; links to established sites; avoiding errors, eg machine-unreadable menus, broken links, poor navigation structure

Testing: uploading to server via file transfer protocol; functionality; speed; security; browser compatibility; W3C standards-compliance; usability; accessibility

Reflective practice: finished product (compared with original intentions, fitness for purpose, technical qualities, aesthetic qualities, content, style); production skills; ideas generation; planning; preparation; workflow and time management; technical competence; project management; monitoring work in progress; creative ability; own work; teamwork; self-evaluation; comments from others, eg audience, peers, tutors, client; documentation, eg notes, sketches, storyboards, production logs

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria					
To achieve a pass grade the evidence must show that the learner is able to:		**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**		**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**	
P1	describe web coding protocols with some appropriate use of subject terminology	**M1**	explain web coding protocols with reference to detailed illustrative examples and with generally correct use of subject terminology	**D1**	comprehensively explain web coding protocols with elucidated examples and consistently using subject terminology correctly
P2	generate outline ideas for a media-rich website working within appropriate conventions and with some assistance [CT]	**M2**	generate detailed ideas for a media-rich website showing some imagination and with only occasional assistance	**D2**	generate thoroughly thought-through ideas for a media-rich website showing creativity and flair and working independently to professional expectations
P3	apply tools and features of web authoring software to produce, publish and test a media-rich website to a specification with some assistance. [SM; RL]	**M3**	competently apply tools and features of web authoring software to produce, publish and test a media-rich website to a specification, to a good technical standard and with only occasional assistance.	**D3**	apply tools and features of web authoring software to produce, publish and test a media-rich website to a specification, to a technical quality that reflects near-professional standards and working independently to professional expectations.

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

This unit introduces learners to the worldwide web and to the software required to author web products (websites and apps). Their explorations should begin with research into the variety of web products and information on the worldwide web. Learners should be encouraged to look at a wide range of web products and think about how they are constructed. Learners could produce a report on their findings, maybe capturing some images to support this exploration. Their introduction to the concept of web authoring software may need to take place in classroom situations carrying out individual exercises. They should be allowed to experiment with software to produce simple web pages that could later be turned into more sophisticated material.

Learners should plan and produce their own pages for a web product. Learners should be allowed to develop appropriate pages from a basic home page or user interface right through to more complicated pages such as forms or animated pages.

Learners should be encouraged to continuously reflect on and monitor their work (and the work of their team where appropriate) through self-evaluation and by obtaining feedback from their tutor and peers. Their reflection should focus on the technical qualities of their web authoring work and how it works in relation to their initial idea, identifying strengths and weaknesses of their work and areas for further improvement. Learners should record these reflections in a log, using appropriate language and terminology.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way of planning the teaching and assessment of this unit.

Topics and suggested assignments and activities
Introduction to unit and unit assessment.
Lecture: demonstration and comparison of web authoring tools.
Lecture: web coding languages (eg HTML, XHTML, CSS) and protocols (hyperlinks, meta tags etc).
Assignment 1 – The Protocols of Web Coding Learners will write a blog for a website analysing other websites. Learners will: • explain how they demonstrate the different languages and protocols of web coding • explain how the pages are structured • use appropriate terminology in their explanations.
Lecture: website accessibility and W3C compliance.
Lecture: search engine optimisation.

Topics and suggested assignments and activities
Skill building using features of web authoring tools including: • HTML • CSS • JavaScript • responsive design techniques • uploading using file transfer protocol (FTP) • testing and validation tools.
Introduction to (or review of) ideas generation and planning.
Assignment 2 – Creating a Website Learners receive a brief from a music promoter to create a website promoting a live music event. Stage 1 – ideas generation. Learners will: • consider and interpret a creative brief • generate and record ideas • find suitable assets and document their locations • carry out planning activities prior to production • maintain a log evidencing the development of their creative work. Stage 2 – production. Learners will: • undertake production workshop sessions following their planned ideas • check for accessibility, test and improve a draft version • publish the website • maintain a development log evidencing their creative work • present work and write review of their own website.
Unit learning and assessment review.

Assessment

Evidence for assessment

Evidence of achievement of learning outcome 1 may comprise a combination of presentations, written reports, diaries or logs of work, notes on production techniques and tutor observations. Oral presentations must be recorded for the purposes of internal and external verification.

A project requiring learners to produce a complete web product to a given brief could be used to assess their ability to apply knowledge and skills, to demonstrate creativity, and to produce a web product to a specification. It could thus be used as evidence for the achievement of learning outcomes 2 and 3. The tutor could either produce a standard specification for all learners or agree specifications with individual learners which provide sufficient scope to cover all elements of web authoring.

For some elements of this unit, and for some learners, a formal viva voce assessment might be appropriate. When more than one learner in a cohort is assessed in this way, care must be taken to ensure that all learners are asked equivalent questions, and that all are given equal opportunities to expand or clarify their answers. Interviewers must also ensure that questions are not phrased in such a way as to provide or suggest an answer. Formal vivas should be recorded for the purposes of internal and external verification and at least 50 per cent of such assessments must be internally verified.

Application of grading criteria

When applying the grading criteria, tutors should follow the advice given below. Please note that any examples of evidence given here are indicative only. This advice is not exhaustive and the examples need not specifically be included in a learner's work in order for that learner to achieve the exemplified grade.

Pass

To achieve a pass grade, learners must achieve all the criteria at pass level. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

P1: learners will give accurate and substantially complete descriptions of web coding protocols covering the main concepts. Evidence will show a basic understanding of technical terminology but learners will generally be unsure about using this vocabulary and will make fairly frequent mistakes when they do use it. When describing the elements of HTML, a pass grade learner might note, 'HTML is a markup language used to reduce the amount of data sent across the internet. Web browsers interpret the markup language locally to display web pages with the correct layout.'

P2: some evidence of initial planning will be present, indicating how learners developed ideas and selected a solution. The planning should show how the web product meets the specification and how learners intend to complete the project within the timescale. It is likely that not all targets will be met and adjustments will have been made to ensure that the web product meets the minimum specification.

P3: screen design and layout will be basic but most of the elements should still function correctly. Any significant problems should have been identified and resolved. In terms of the aesthetic or imaginative qualities of their work, learners will not move beyond the conventional, but the conventions applied will be appropriate to the type of web product on which they are working. Learners will carry out basic tests ensuring their web product functions correctly (operation of buttons, links etc). Learners will consider their own work reflectively in order to show some development development in the work.

P2 and P3: learners will need frequent assistance and support, though they will take note of and make use of this help when it is given. If they are in frequent need of such help but fail to make positive use of it, they should not be considered for a pass grade for this unit.

Merit

To achieve a merit grade, learners must achieve all the pass and all the merit grade criteria. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

M1: when explaining web protocols, learners will select detailed illustrative examples. The explanation will be comprehensive and use appropriate terminology. Learners will use technical vocabulary for the most part correctly, but may make mistakes or be unsure about usage at times. A merit grade learner might note, 'HTML codes are often referred to as tags. These are elements of the markup language used in web page layout. Tags can easily be identified because they are enclosed in less than '<' and greater than '>' brackets. For example the tags <TITLE>My Website </TITLE> will cause the title 'My Website' to be visible in the title bar of the user's browser.'

M2: clear evidence of planning will be present, indicating how learners developed a range of ideas and selected the best one for a solution. A good implementation plan will be evident including visualisations. Learners will review their work on an ongoing basis, obtaining feedback from the tutor and peers. Their plan will be updated regularly to ensure work is completed on time. Records of production are likely to include a log or diary with production notes, diagrams, screenshots etc.

M3: learners will produce a functional web product to an agreed specification using a wide range of authoring tools. The final product will apply the concepts and principles of web authoring with some imagination – that is, learners will still be working within recognisable generic conventions, but there will be some imaginative thought behind the work so that technical skills and codes and conventions will be employed with some inventiveness. The web product should have been fully tested with records of any problems logged. For a merit grade, all elements of the web product should be fully functional and should meet current requirements for website or app design. Learners will carry out basic tests and could also complete more advanced tests such as checks for usability, accessibility etc. There will also be evidence of some search engine optimisation techniques (for example, meta tags). Learners will explain what they have tried to accomplish and how they have worked to try to achieve what they have set out to do. They will explain decisions made and exemplify these explanations through relevant and detailed reference to their own work, though the examples they give will not be further elucidated. In a review a merit learner might, for example, note, 'Following tests of my website on a remote server it became apparent that the download times for the home page was excessive. I fixed this by compressing the images used on the home page. I uploaded the pages again, retested and found that the download times were now acceptable.'

M2 and M3: learners will need occasional support, particularly when dealing with more complex technology or trying to apply more sophisticated techniques. Like the pass grade learner, they will benefit from such support.

Distinction

To achieve a distinction grade, learners must achieve all the pass, all the merit and all the distinction grade criteria. For each of the criteria learners must present evidence that addresses each italicised sub-heading of the content for the learning outcome.

D1: learners will explain web protocols by citing and explicating specific examples. The arguments made will be clear and expressed using fluent technical language which will be secure and used correctly and confidently at all times. Fuller and more extensive explanation, better application of examples, and provision of argument to support points made, plus the higher quality expression, will discriminate between this grade and the merit. A distinction grade learner might note, 'Not all HTML is used for layout and format. Some codes are used for special purposes such as metadata. For example, the following tags <META name="Description" content="Description of site"> and <META name="keywords" content="keywords describing site"> are used to make sure that search engines properly index your website. It is very important to select and use the best keywords and phrases to describe the site to help improve the site's ranking with search engines.'

D2: full evidence of planning will be present, including the creative design process, research, and consideration of good practice and current requirements. Learners will consult the client (or tutor acting as client) to clarify items of the specification and seek approval for designs. The plan will include appropriate charts with milestones and key dates clearly marked. There will be evidence of planning the entire web product in the form of site maps, screen layout, navigation, storyboards etc.

D3: learners will produce a web product to an agreed specification of technical quality that reflects near-professional standards. The product will implement the concepts, principles and standards of web authoring with flair. Learners will apply their technical skills not just with imagination but with ingenuity, and codes and conventions will be used with occasionally surprising results. A full range of authoring tools will be used during the production. The web product will comply with all current requirements for the purpose specified and will have been completed without assistance. Learners will actively seek feedback on their work on an ongoing basis from the tutor and their peers. A full and comprehensive log of all work carried out on production will be provided. The project will be completed on time and will be fully tested. Learners will carry out a full range of tests to ensure that it meets the specification and complies with current legislation. They will also have carried out some form of user testing, obtained feedback and either made changes or noted recommendations for further improvement. Learners will make an accurate and critically objective assessment of their own achievement with detailed reference to elucidated examples taken from that work. They will make critical comparisons of their own work with current practice in website and app design. A distinction grade learner might report, 'I carried out user tests with users from the target audience group using computers with a variety of connection speeds and different web browsers. Feedback and problems were logged using a standard form. In response to the feedback, modifications were made to improve the site's performance and the product was republished to incorporate the improvements. In particular I was pleased that the users liked the navigation and found information quickly with a minimum of clicks, as this is a feature that I rate highly in the websites I use.'

D2 and D3: learners will be capable of working autonomously and effectively. The term 'working independently' means that they are able to work on their own initiative, do not need constant support or supervision, give the work their full commitment, work positively and cooperatively with others, and meet deadlines. In other words, they have the kind of self-management skills that would be expected of them in a professional context. Note also that this criterion should not be taken to mean that learners do not seek advice or that they work without discussing things with their tutor, but rather that they are not dependent upon the support of others and that when they take advice they weigh it carefully for themselves.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Pearson assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, M1, D1	Assignment 1 – The Protocols of Web Coding	Contribution to online blog – analysis of existing web coding protocols.	• All preparatory notes. • Report document as word processed or electronic presentation.
P2, M2, D2	Assignment 2 – Creating a Website Stage 1 – ideas generation	Brief from a music promoter to create a website promoting a live music event.	• All ideas notes, sketches and drafts. • Asset audit sheet. • Summary of legal and ethical implications.
P3, M3, D3	Assignment 2 – Creating a Website Stage 2 – production	As above.	• Final product uploaded to web. • All production documentation. • Testing reports. • Development log. • Written review.

Links to other BTEC units

This unit forms part of the BTEC Creative Media Production suite. This unit has particular links with the following units in the BTEC Creative Media Production suite:

Level 2	Level 3
	Digital Communication
	Digital Graphics for Interactive Media
	Interactive Media Authoring

Essential resources

Learners will need access to computer hardware and to appropriate image editing and web authoring software and FTP. They will also need web space for developing work and publishing final web pages.

Employer engagement and vocational contexts

Centres should develop links with local web production studios which could be approached to provide visiting speakers, study visits or samples of typical products.

ScreenSkills, the Sector Skills Council for the creative media sector, has a substantial section of its website dedicated to careers, including job descriptions.

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Creative thinkers	generating ideas and exploring possibilities for websites trying out alternative ways of constructing their own website, following ideas through to complete a website adapting their ideas as circumstances change
Reflective learners	reviewing and reflecting on their production of a website and acting on the outcomes to modify and improve their work setting goals with success criteria for their production work inviting feedback on their own work and dealing positively with praise, setbacks and criticism evaluating their experiences and learning to inform future progress
Self-managers	organising time and resources and prioritising actions when producing a website, whether working on their own or in a group seeking out challenges or new responsibilities and showing flexibility when priorities change dealing with competing pressures, including personal and work-related demands responding positively to change, seeking advice and support when needed.

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	planning and carrying out research into websites to develop their understanding of website design and protocols carrying out research to develop ideas for their own website
Team workers	collaborating with others to use digital communication systems or produce a website taking responsibility for their own role when working in a group managing discussions to reach agreements and achieve results.

Functional Skills – Level 2

Skill	When learners are …
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	handling web authoring systems to author their site
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	planning for the authoring of a website
Manage information storage to enable efficient retrieval	managing assets sourced and created for their website managing pages created for their website
Follow and understand the need for safety and security practices	handling web authoring systems to author their site
Troubleshoot	handling web authoring systems to author their site testing their site
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	sourcing assets for their website
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	researching asset types and protocols for use with web authoring tools
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	building and presenting their project portfolio and blog showing: • interpretation of the brief • generation of ideas • documentation and management of chosen assets • consideration of legal implications • review of own work
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	
Evaluate the selection and use of ICT tools and facilities used to present information	preparing a report on web authoring methods and protocols
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	gathering feedback on their web authoring work as part of their self-reflective practice

Skill	When learners are …
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	taking part in brainstorming sessions to generate ideas as a response to a creative brief presenting the final site to their peer group and talking about it
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reviewing literature and websites to find examples of website design and find out about the tools and protocols
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	creating a blog about digital communication systems writing down ideas and notes creating production documentation and testing reports writing reflective reviews.