Higher National Unit specification

General information

Unit title: Web Development: Content Management Systems (CMS) (SCQF level 7)

Unit code: HF3H 34

Superclass:	CB
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Source:	Scottish Qualifications Authority
Version:	01

Unit purpose

The purpose of this Unit is to develop the knowledge and skills required to install, set up and implement a content management system (CMS).

The Unit is suitable for a wide range of learners with a personal or vocational interest in website development.

The Unit includes the selection, installation and operation of a content management system so that the features and facilities can be used to create tested and functional websites. The Unit also covers the importance of security, adding security features and the CMS workflow for managing the review and approval of content before publishing.

On completion of the Unit the learner will be able to install and set up a content management system for development purposes and create fully functional, tested and template based websites built on a CMS. They will also understand the importance of having a CMS workflow and putting security measures in place.

Outcomes

On successful completion of the Unit the learner will be able to:

1 Install a suitable content management system (CMS).
2 Plan a website to be built on a content management system.
3 Build a website on a content management system.
4 Deliver a fully functional website built on a content management system.

Higher National Unit specification: General information (cont)

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Credit points and level

2 Higher National Unit credits at SCQF level 7: (16 SCQF credit points at SCQF level 7)

Recommended entry to the Unit

While access to this Unit will be at the discretion of the Centre, learners would benefit from the knowledge and fundamental skills of web design and development.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

Higher National Unit specification: Statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Learners should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Install a suitable content management system (CMS)

Knowledge and/or Skills

♦ Current content management systems (including suitability and source)
♦ Comparison of bespoke websites and websites built on content management systems (including advantages and disadvantages of each)
♦ Content management system installation process on local and hosting servers
♦ Troubleshooting basic installation problems

Outcome 2

Plan a website to be built on a content management system.

Knowledge and/or Skills

♦ Website objectives
♦ End users
♦ Appropriate content (including type and source of content)
♦ Website structure

Outcome 3

Build a website on a content management system.

Knowledge and/or Skills

♦ Suitable themes/templates (including vendor, 3rd party, paid and free)
♦ Website structure
♦ Content and navigation menus
♦ Features and functionality of the CMS (including plugins/extensions and Search Engine Optimisation -SEO)
♦ Functionality testing of the website (including interactivity, browser and device compatibility)

Higher National Unit specification: Statement of standards (cont)

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Outcome 4

Deliver a fully functional website built on a content management system.

Knowledge and/or Skills

♦ Administering website for client use (including setting up registered users and levels of access)
♦ Fully testing of the management and update of the website by registered users
♦ user documentation for client use
♦ Content management system website workflow (to manage content including creation, review, edit, approval and publish)
♦ Security issues affecting websites built on content management systems and steps that can be taken to minimise security attacks

Evidence Requirements for this Unit

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills across all Outcomes.

The evidence for this Unit may be written or oral or a combination of these. Evidence may be captured, stored and presented in a range of media (including audio and video) and formats (analogue and digital). Particular consideration should be given to digital formats and the use of multimedia.

The Evidence Requirements for this Unit will take two forms:

1   Evidence of cognitive competence (Knowledge and Understanding) for Outcomes 1 and 4.
2   Evidence of practical competence (practical abilities) for all Outcomes.

The evidence of cognitive competence for Outcome 1 will be:

♦ an analysis of the suitability of current content management systems.
♦ an evaluation of bespoke websites and websites built on content management systems.

The evidence of cognitive competence for Outcome 4 will be:

♦ an explanation of the importance of having a content management system workflow.
♦ an explanation of why websites built on content management systems are vulnerable to security attacks.
♦ a description of steps that can be taken to minimise security risks.

Higher National Unit specification: Statement of standards (cont)

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Sampling is permissible when the evidence for cognitive competence is produced by a test of knowledge and understanding. The test may take any form (including oral) but must be supervised, unseen and timed. The contents of the test must sample broadly and proportionately from the contents of the knowledge domain (see above). Access to reference material is not appropriate for this type of assessment. If other methods of assessment are used, such as a report, open-book conditions must be applied. Refer to the assessment guidelines for further information.

The evidence of **practical** competence for all Outcomes will be:

♦ successful installation and configuration of a content management system.
♦ production of planning documentation for a website to be built on a content management system that covers all Outcome 2 knowledge and skills.
♦ development of a functional website built on a content management system that demonstrates all Outcome 3 knowledge and skills.
♦ testing the functionality of the website to ensure it works as required.
♦ setting up of registered users with different levels of access.
♦ testing the management and update of a CMS website by registered users with different levels of access to ensure that it works as required.
♦ production of user documentation for client use.

Evidence of practical competence may be produced over an extended period of time. Evidence may be wholly or partly produced under controlled conditions. When evidence is produced in uncontrolled or loosely controlled conditions it must be authenticated. The *Guidelines on Approaches to Assessment* (see the Support Notes section of this specification) *provides* further advice on methods of authentication.

The *Guidelines on Approaches to Assessment* (see the Support Notes section of this specification) provides specific examples of instruments of assessment.

Higher National Unit Support Notes

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Unit Support Notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours.

Guidance on the content and context for this Unit

The Unit is intended to provide learners with the knowledge and skills required to install a content management system on either a local or remote server and use the CMS to develop a fully functional website by taking on the role of administrator. The Unit will develop the learner's skills in planning the website from a brief before implementation takes place. The importance of security and precautions that can be put in place to ensure a CMS website is as secure as possible will also be covered.

Outcome 1 covers the current content management systems available. It is intended that learners will research the advantage and disadvantages of different open source content management system websites and how websites built on a CMS compare with bespoke websites. The learner will have the opportunity to download a content management system and either install it using a local server, possibly XAMPP, WAMPP, MAMPP or set up a domain and webhost where it can installed remotely.

Outcome 2 covers the planning side of web development. Whatever the type of website to be developed - planning is a crucial stage. The learner will gain the skills required to produce documentation that includes client requirements and site objectives as well as the end user requirements and the type and quantity of content to be used in the site. This knowledge will allow the learner to produce a site map which is crucial when developing the site.

Outcome 3 covers the skills required to develop a fully functional CMS website. This includes setting up as the administrator and all the most useful features and tools of the chosen CMS. Knowledge of themes/templates will be covered including themes that come with the CMS, how to customise themes, how to import new themes, an awareness of the positive and negative aspects of commercial and free themes and the importance of the quality and relevance of the themes selected. An awareness of design trends will also be covered. The structure of the site should match the site map created during the planning stage. The practical aspect of adding content, navigation menus, additional features and functionality using a variety of extensions/plugins and implementing SEO will also be covered. Finally the knowledge and skills required for testing of the CMS website for functionality on browsers and devices will be covered.

Higher National Unit Support Notes (cont)

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Outcome 4 covers setting up registered users and allocating roles and capabilities for managing and updating the website. Testing the managing and updating of the site by allocated registered users will also be included. The CMS workflow will be introduced which helps organisation teams to manage and review and approval of content before it is published.

Finally security will be covered including the vulnerability of websites built on open source content management systems and the steps that users can take to protect the site, database and themselves.

Guidance on approaches to delivery of this Unit

It is recommended that learners attempting this Unit would benefit from knowledge and fundamental skills of web design and development.

As an introduction to the Unit it would be advantageous to compare the difference between bespoke websites and open source content management system websites and see examples of both types of websites. The various open source content management systems available should be researched and a comparison of the features noted. At the time of writing the three most popular open source content management systems are WordPress, Joomla and Drupal and any one of these would be suitable for delivering this Unit. There are also many others available and the following link shows a review: http://cms-software-review.toptenreviews.com/

At this stage, it might be useful to introduce the CMS workflow and security aspects of open source CMS. A comparison of bespoke websites and websites built on an open source content management system can be found at this address (current at the time of writing) http://absolutemedia.co.uk/news/digital/bespoke-web-development-or-open-source-cms.

After the introduction, the other knowledge and skills can be covered in full. It is recommended that the tutor selects the CMS to be used but learners would benefit from downloading and installing this on an individual basis. Depending on centre resources this can be done on either a local server using XAMPP, WAMPP or MAMPP or on a remote server when the learner will be required to access a domain name and suitable webhost. The installation of the CMS is required evidence, so this should be done by the learners without support. This may require a CMS to be installed, uninstalled, and then reinstalled.

Building the skills required to use the CMS will take a reasonable amount of. Practical tutorials based on a demonstration website are one recommended approach. There are many online resources available to cover each of the three most popular open source content management systems.

After the learners have gained the skills in using a CMS, the importance of planning and testing a website should be covered. It may be that these elements are covered in another Unit that the learners are undertaking, in which case this can be done briefly.

Once the learners are competent in using a content management system and know how to plan and test, they can be given the holistic assessment that covers all Outcomes.

Higher National Unit Support Notes (cont)

Unit title: Web Development: Content Management Systems (CMS)

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to candidates.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where candidates experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Assessment could be carried using:

♦ extended response questions that cover the knowledge and understanding for Outcomes 1 and 4.
♦ a practical task that covers the practical competence for all Outcomes.

The Extended response questions would require the candidate to research and produce a report, log or presentation which demonstrates that the candidate is able to:

♦ analyse the suitability of current content management systems.
♦ compare and evaluate bespoke websites with websites built on content management systems.
♦ explain the importance of having a content management system workflow and produce a CMS workflow diagram.
♦ explain why websites built on open source content management systems are vulnerable to security attacks.
♦ describe steps that can be taken to minimise security risks.

The evidence produced should be written in the candidates' own words. References to websites and resources used for research should be included as part of the report.

The practical tasks could take place over an extended period of time. In this scenario the candidate would be given a website brief and a set of tasks that requires them to install a content management system then plan, build, test and deliver a CMS website. The brief needs to be sufficient in that it allows the candidate to cover all practical Evidence Requirements for all Outcomes. This will demonstrate that the candidate has the practical competence required for all Outcomes.

The assessments will be open-book and carried out under both supervised and unsupervised conditions. The installation of a content management system should take place under supervised conditions. If the installation is on a local server, then the candidate may be restricted to working on the assessment within the centre, however if the installation is on a hosted server then the candidate could work on the development of the website out with the centre. If this is the case it is important that steps are taken to ensure the authenticity of the candidates' work. This could be done by questioning how certain aspects of the project have been achieved or the candidate asked to demonstrate how something has been achieved.

Higher National Unit Support Notes (cont)

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Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at **www.sqa.org.uk/e-assessment**.

Opportunities for developing Core and other essential skills

The Unit helps learners develop the Core Skill Components in *Communication* by presenting some evidence in report or presentation format. The Unit also gives learners the opportunity to enhance their *Information and Communication Technology (ICT)* and *Problem Solving* skills, whilst installing software and using a CMS to develop a fully functional website. There are opportunities to develop broader skills in employability, enterprise and citizenship if the project brief used is based on a real client, for example a charity, a public service organisation or a business project.

History of changes to Unit

Version	Description of change	Date

General information for learners

Unit title: Web Development: Content Management Systems (CMS)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This Unit covers the knowledge and skills required to install and set up a content management system (CMS), then use the CMS to develop a fully functional website. The most popular content management systems around at the time this Unit was written are WordPress, Joomla and Drupal, although there are others available.

While working through the Unit you will research current content management systems and compare websites built on a CMS with bespoke websites. You will learn how to install a content management system and then how to operate it and use its facilities, functions and plugins/extensions to enable you to build a fully functional CMS website.

You will also learn about the importance of security, the vulnerability of websites and the steps you can take to help make a CMS website secure.

Finally you will learn about the CMS workflow which is all about maintenance and the updating of content on a website.

There will probably be two assessments that you will need to complete during this Unit. One will be a theory based assessment where you will be have to carry out research on content management systems and associated security issues. From your research you will need to produce a report, log or presentation. The other assessment will be a practical task where you will be given a brief and from this brief plan, build and test a content management system website. You will need to produce documentation and a working website. Your centre may choose to use a real client brief for the practical task and this may give you the opportunity to work with real clients.

The Unit will help you develop the Core Skill Components in *Communication* by presenting some evidence in report or presentation format. The Unit will also give you the opportunity to enhance the *Information and Communications Technology (ICT)* and *Problem Solving* skills, whilst installing software and using a CMS to develop a fully functional website. There are opportunities to develop broader skills in employability, enterprise and citizenship if the project brief used is based on a real client, for example a charity, a public service organisation or a business project.