

SPECIFICATION

IAO Level 3 Certificate in Web Design and Development
Qualification Number: 601/8498/X



Innovate Awarding is an Ofqual regulated awarding organisation with an innovative and dynamic approach. We develop off-the-shelf, customised and fully bespoke qualifications across a growing number of sectors – all on the Regulated Qualifications Framework (RQF).

Our portfolio is always growing and we currently have qualifications in the following sectors:

Active Leisure
Business and Management
Childcare
Employability
Retail

Health and Social Care
Hospitality and Catering
IT
Logistics
Education and Training

We currently offer over 120 qualifications and we're continuously developing and diversifying our portfolio. Please visit our website regularly to keep up-to-date www.innovateawarding.org

This document will be updated if there are any changes so it is important to make sure you are working from the most up-to-date version, which is available to download from our website

This specification also provides details on administration, quality assurance policies and the requirements as well as responsibilities that are associated with the delivery of vocational qualifications.

Innovate Awarding is recognised as an awarding organisation by the qualifications regulator Ofqual (England).

If you have any questions regarding qualifications in general, aspects of specific qualifications or our quality assurance policies and procedures, visit our website where a lot more information is available.

If you cannot find what you are looking for on our website, please call or email our customer support team:

Telephone: 0117 314 2800

Email: contactus@innovateawarding.org

“ We work with a wide variety of organisations such as employers, training providers, FE colleges and Sector Skills Councils and develop off-the-shelf, customised and bespoke qualifications. ”

Qualification summary

Qualification Accreditation Number (QAN)	601/8498/X
Qualification review date	31/03/2021
Guided Learning Hours (GLH)	Minimum 40 hours
Total Qualification Time (TQT)	250 hours
RQF level	3
Qualification credit value	25 credits
Minimum credits at/above level	23 credits
Assessment requirements	<p>Portfolio of Evidence</p> <p>This qualification is internally assessed and internally quality assured by Centre staff and externally quality assured by Innovate Awarding External Quality Advisors (EQAs).</p>
Aims and objectives of the qualification	<p>This qualification provides the learner with the essential skills, knowledge and understanding to work on web developments and networking basics. It covers aspects such as web technologies, JavaScript, HTML, internet security and Cascading Style Sheets. It gives the learner an understanding of the jobs available and the work requirements of a web designer or developer.</p>
Entry guidance	<p>There are no entry requirements although it is recommended that centres carry out initial assessments in mathematics, IT and English levels</p>
Progression opportunities	<p>Progression could be to job roles or other ICT practitioner qualifications, the job roles could include web design engineer, web developer or webmaster, software developer.</p>
Funding	<p>For details on eligibility for government funding please refer to the following websites:</p> <p>http://www.education.gov.uk/section96</p> <p>https://www.gov.uk/government/organisations/skills-funding-agency</p>

Innovate Awarding

When you work with Innovate Awarding, you're working with an awarding organisation that sets itself apart – a dynamic company with a collaborative approach to doing business. We're consultative and innovative...everything that our customers say they want an awarding organisation to be.

We're easy to work with, committed and passionate about exceeding our customers' expectations. We're not tied down by bureaucracy and red tape and can think outside the box and respond quickly to our customers' needs.

We have a Performance Pledge that details guaranteed response times. Copies of these can be found on our website www.innovateawarding.org

Feedback

Your feedback is very important to us. We're always open to suggestions when it comes to enhancing and improving our services, products and systems. Email us at contactus@innovateawarding.org or call us on 0117 314 2800.

Complaints

If we do get things wrong, we'll make every effort to resolve your issues quickly and efficiently. If you'd like to raise a formal complaint then we recommend you read our Complaints Procedure which can be found on our website.

Fees

Our fees structure is transparent and straightforward. Our fees are published on our website in a clear format with no hidden charges. Unlike other awarding organisations, we do not charge an annual centre fee. Visit our website to compare our fees.

Enquiries and Appeals

We recognise that sometimes decisions are made that a centre (or learner) may wish to appeal. We have an Enquiries and Appeals Policy and Process on our website that sets out guidelines on grounds for appeal and the process.

Data Protection

Innovate Awarding takes the protection of data seriously; we have a data protection statement outlining how we and our centres, comply with the current legislation on data protection. This statement can be found on our website.

Equality and Diversity

Innovate Awarding is committed to giving everyone who wants to gain one of our qualifications an equal opportunity of achieving it in line with current UK legislation (Equality Act 2010) and EU directives.

Centres are required, as conditions of approval, to use an equality and diversity policy that works together with ours and that they maintain an effective complaint and appeals process. We expect centres to tell learners how to find and use their own equality and diversity and appeals processes. For information, please visit our website.

Reasonable Adjustment and Special Consideration

All learners must be treated fairly and equally and be given every opportunity to achieve our/the qualifications. A copy of our policy on Reasonable Adjustments and Special Considerations, and application form, can be found on our website.

Malpractice and Maladministration

Innovate Awarding has a responsibility to do everything it can to prevent any malpractice or maladministration from occurring, and where it has already occurred, ensuring action is taken proportionate to the gravity and scope of the occurrence.

A copy of our policy and procedure on Malpractice and Maladministration is available on our website.

Recognition of Prior Learning (RPL)

RPL recognises how the contribution of a learner's previous experience could contribute to a qualification or unit. Innovate Awarding have produced guidance on RPL and this can be found within our Information and Guidance for Centres on our website.

Please note the above is not a comprehensive guide to running IAO qualifications. Once approved centres must adhere to the Centre Agreement and Information and Guidance for Centres.

The Regulated Qualifications Framework (RQF)

What is the RQF?

The Regulated Qualifications Framework (RQF) is an Ofqual regulated system of cataloguing qualifications. Qualifications on the RQF can be found by their size or level. Qualifications at a given level can differ depending on their content and purpose.

All of Innovate Awarding's qualifications are on the RQF.

Qualification Level

The level reflects the challenge or difficulty of the qualification. There are eight levels of qualification from 1 to 8, supported by three "Entry" levels.

Qualification Size

The size of a qualification reflects the estimated total amount of time it would take the average learner to study and be assessed. The size of a qualification is expressed in terms of Total Qualification Time (TQT). The time spent being taught or supervised, rather than studying alone, is the Guided Learning Hours (GLH).

Qualifications can sit at different levels, but require similar amounts of study and assessment. Similarly, qualifications at the same level can take different amounts of time to complete.

Qualification Structure

Learners must achieve all of the mandatory content. Learners must gain all 22 units with a total value of 25 credits to gain the IAO Level 3 Certificate in Web Design and Development (RQF).

The total Guided Learning Hours (GLH) for this qualification is 40 hours.

The Total Qualification Time (TQT) is 250 hours.

Unit Structures

All mandatory units are included in this specification pack.

Mandatory units

Unit ref	Unit title	Level	Credit value	GLH
F/508/2282	Applied JavaScript	3	1	2
L/508/2284	Applying Cascading Style Sheets (CSS)	3	2	2
D/508/2287	Communicating with Internet Technology	3	2	4
H/508/2291	Configuring an email client to send and receive email in a workplace context	3	1	0
T/508/2294	Essential JavaScript Principles and Practices	3	1	2
M/508/2293	JavaScript Programming Techniques	3	1	2
A/508/2278	JavaScript Technology Extensions	3	1	2
K/508/2292	Network maintenance and issues	3	1	2
Y/508/2286	Principles of Database Concepts	2	1	1
R/508/2285	Principles of Internet Security	3	1	3
K/508/2289	Principles of networking fundamentals	3	1	2
R/508/2321	Seek job opportunities in Information Technology	2	1	2
Y/508/2322	Server side scripting on web servers	3	1	1
F/508/2296	Understanding how to Use HTML5	3	1	2
F/508/2279	Understanding Internet Architecture	3	1	1
L/508/2298	Understanding Project Management in Information Technology	3	2	2
A/508/2300	Understanding Web Browsers	3	1	0
F/508/2301	Using GUI HTML for Website Development	3	1	0
L/508/2303	Using Internet Services	3	1	5
D/508/2306	Website development, planning and testing	3	1	2
H/508/2310	Website Diagram and Design	3	1	2

J/508/2297	Wireless networking and privacy protection	3	1	1
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Title:	F/508/2282 Applied JavaScript
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	11
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to use JavaScript to develop interactive forms.	1.1 Use form controls 1.2 Define the form object 1.3 Use the button object 1.4 Use the checkbox object 1.5 Evaluate text with: <ul style="list-style-type: none"> • text • text area objects 1.6 Process radio object options 1.7 Capture choices from a select list with the select object. 1.8 Conduct form validation, including valid X/HTML code.
2. Be able to modify X/HTML with JavaScript.	2.1 Identify steps and methods for changing X/HTML 2.2 Modify attributes in X/HTML using DOM (Document Object Model) elements. 2.3 Modify values in X/HTML using DOM elements. 2.4 Use the inner HTML element
3. Understand JavaScript security issues involving browsers and cookies	3.1 Distinguish between the browser and the operating system in relation to the elements responsible for security 3.2 Discuss browser security issues relevant to JavaScript 3.3 Define signed scripts 3.4 Determine browser compatibility by performing client-side browser detection 3.5 Identify the following when creating secure JavaScript code: <ul style="list-style-type: none"> • issues

	<ul style="list-style-type: none"> • procedures <p>3.6 Define cross-site scripting, including the associated security risks</p> <p>3.7 Define the functions of cookies</p> <p>3.8 Manipulate cookies effectively</p> <p>3.9 Assign a cookie using JavaScript</p> <p>3.10 Use cookies and passwords to restrict entry to a page</p>
<p>Additional information about this unit</p> <p>N/A</p>	
Unit aim (s)	<p>The aim of this unit is to build on the knowledge of JavaScript and apply the techniques in interesting and creative ways.</p>

Title:	L/508/2284 Applying Cascading Style Sheets (CSS)
Level:	3
Credit Value:	2
Calculated GL:	2
Calculated TQT:	19
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understanding the principle of the current version of CSS (Cascading Style Sheets)	1.1 Explain the function and purpose of CSS 1.2 Outline the additional features added to current CSS version 1.3 Explain the relationship between property and selector in CSS 1.4 Describe the role the CSS box model plays in web design 1.5 Define common CSS positioning schemes
2. Be able to apply the basics of the current version of CSS	2.1 Apply fonts using CSS 2.2 Apply text effects using CSS 2.3 Apply backgrounds and borders using CSS 2.4 Create border images to have rounded corners
3. Be able to apply the advanced of the current version of CSS	3.1 Apply 2D and 3D transformations using CSS 3.2 Apply transitions and animations using CSS 3.3 Create transparencies and overlays using CSS 3.4 Create menus using buttons with CSS 3.5 Explain the common properties used in creating a user interface with CSS
Additional information about this unit	
N/A	

Unit aim (s)

To understand the underlying concepts of the latest version of Cascading Style Sheets (CSS3) and how to apply them to enhance the effectiveness of a web page.

Title:	D/508/2287 Communicating with Internet Technology
Level:	3
Credit Value:	2
Calculated GL:	4
Calculated TQT:	19
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to communicate etiquette using Internet Technology	1.1 Describe common communications aids 1.2 Explain the link between current legislation and ethical online conduct 1.3 Create relevant, appropriate and brief messages 1.4 Explain the link between the following: <ul style="list-style-type: none"> • Voice over IP (VoIP) • Presencing • Mobile computing • Call/contact centres • Conversion of voice to text 1.5 Use communication technology to create effective messages
2. Understand social networking and Web 2.0 technologies	2.1 Define: <ul style="list-style-type: none"> • social networking • Web 2.0 concepts • mashup 2.1 State elements of a blog 2.2 Distinguish between traditional categories and folksonomies 2.3 State elements of a news feed service 2.4 Outline social networking sites and their features
3. Be able to conduct and understand Webcasts	3.1 Conduct a webcast 3.2 List the elements of a successful webcast 3.3 Distinguish benefits and drawbacks of webcasts versus face-to-face-person meetings

4. Be able to communicate with non-technical audiences	4.1 Communicate technical issues and concerns to an end user 4.2 Explain the value of IT-related expenses to others
Additional information about this unit N/A	
Unit aim (s)	The aim of this unit is to enable learners to understand the how to communicate effectively and appropriately over the internet which includes learners conducting their own webcasts. This unit also explores the ethical and security issues when communicating via the internet.

Title:	H/508/2291 Configuring an email client to send and receive email in a workplace context
Level:	3
Credit Value:	1
Calculated GL:	1
Calculated TQT:	6
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to configure an e-mail client	1.1 Configure an e-mail client to send and receive e-mail, including SMTP, POP3, IMAP, Web-based e-mail support 1.2 Distinguish between MIME, S/MIME and PGP/GPG 1.3 Configure an e-mail signature 1.4 Identify the usefulness of an email signature in a business setting 1.5 Identify the usefulness of an e-mail thread/conversation view 1.6 Describe when it is appropriate to have an email thread/conversation view 1.7 Manage spam, including creation of client-side filters and SMTP authentication 1.8 Define blind copying (BCC) 1.9 Distinguish e-mail forwarding from replying
2. Be able to use email in a workplace context	2.1 Identify ways that e-mail is used in the workplace, including elements of a successful e-mail message 2.2 Identify e-mail issues in the workplace 2.3 Use "Out of Office" messages for e-mail automatic reply 2.4 Attach files to e-mail messages 2.5 Use e-mail to share files and documents within and across organisations 2.6 Identify concerns for Web-based and IMAP-based e-mail 2.7 Identify situations in business environments when e-mail is more

	appropriate than texting for communicating, and vice-versa
Additional information about this unit N/A	
Unit aim (s)	The aim of this unit is to enable learners to understand and use email services.

Title:	T/508/2294 Essential JavaScript Principles and Practices
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	10
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand characteristics of JavaScript and common programming practices	1.1 List key JavaScript characteristics 1.2 Identify programming concepts, including objects, properties and methods 1.3 Describe various JavaScript <ul style="list-style-type: none"> • versions • flavours 1.4 Distinguish between server-side and client-side JavaScript applications 1.5 Describe coding practices, including appropriate use of comment tags and the tag
2. Understanding variables and data in JavaScript	2.1 Use attributes and methods to communicate with users, including the type attribute, and the alert(), prompt() and confirm() methods 2.2 Define variables 2.3 Use data types, including null and undefined 2.4 Obtain user input and store it in variables 2.5 Report variable text to the client window 2.6 Distinguish between concatenation and addition 2.7 Use expressions 2.8 Use operators 2.9 Implement inline scripting 2.10 Implement simple event handlers 2.11 Define keywords and reserved words in the script

<p>3. Be able to use JavaScript functions, methods, and events</p>	<p>3.1 Use methods as functions 3.2 Define functions. 3.3 Use data type conversion methods 3.4 Call functions 3.5 Pass arguments to functions 3.6 Return values from functions 3.7 Distinguish between global and local variables 3.8 Use the conditional operator 3.9 Identify user events and event handlers 3.10 Use built-in functions and cast variables</p>
<p>Additional information about this unit</p> <p>N/A</p>	
<p>Unit aim (s)</p>	<p>The aim of this unit is to provide an introductory guide to the working principles and practices of JavaScript</p>

Title:	M/508/2293 JavaScript Programming Techniques
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	11
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to use JavaScript statements to control program flow	1.1 Use the following statements to control program flow on JavaScript: <ul style="list-style-type: none"> • if • while • do while • for • break • switch
2. Be able to use the JavaScript Document Object Model (DOM) and Browser Object Model (BOM)	2.1 Use JavaScript to manipulate the Document Object Model (DOM) and Browser Object Model (BOM) 2.2 Use the window 2.3 Use the with statement 2.4 Use the image, including image rollover creation 2.5 Use the history 2.6 Evaluate URL information with the location 2.7 Change URL information with the location 2.8 Use the navigator
3. Be able to use JavaScript language objects and create expressions.	3.1 Use the String object to test user input 3.2 Evaluate strings 3.3 Identify basic regular expressions and the RegExp object 3.4 Use the Array object to create efficient code 3.5 Identify uses for the Date and Math objects
4. Be able to create and use custom JavaScript objects.	4.1 Create a custom JavaScript object 4.2 Define properties and methods of custom objects

	<ul style="list-style-type: none"> 4.3 Create new object instances 4.4 Create client-side arrays using custom objects 4.5 Create functions and methods for manipulating client-side arrays 4.6 Use the prototype property
5. Be able to debug and troubleshoot JavaScript code	<ul style="list-style-type: none"> 5.1 List common steps for debugging JavaScript code 5.2 Describe various native and supplemental debugging tools 5.3 Utilise various native and supplementation debugging tools 5.4 Test code in multiple display platforms, including mobile devices
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to provide an intermediate guide to the working principles and practices of JavaScript

Title:	A/508/2278 JavaScript Technology Extensions
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	9
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand JavaScript libraries	1.1 Evaluate the benefits and drawbacks of using predefined libraries and plug-ins 1.2 Identify steps for using libraries 1.3 Identify steps for: <ul style="list-style-type: none"> • loading scripts • referencing external scripts • premade external scripts
2. Be able to use JavaScript and AJAX to create interactive web applications	2.1 Define AJAX <ul style="list-style-type: none"> • elements • procedures 2.2 Identify key XML structures and restrictions in relation to JavaScript 2.3 Explain how the XMLHttpRequest object interacts with XML 2.4 Use the XMLHttpRequest object to retrieve data. 2.5 Describe typical AJAX-based requests 2.6 Identify key server response issues related to AJAX-based requests 2.7 Use JavaScript to communicate with databases 2.8 Identify alternatives to XML-based AJAX
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to apply JavaScript extensions to build interactive web pages.

Title:	K/508/2292 Network maintenance and issues
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	8
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand internet security issues	1.1 Describe procedures to counter attacks. 1.2 Explain how social engineering attacks are: <ul style="list-style-type: none"> • Recognised • Avoided 1.3 Explain the difference between: <ul style="list-style-type: none"> • Symmetric encryption • Asymmetric encryption 1.4 Define authentication principles 1.5 Describe the purposes of remote access protocols 1.6 Define fundamental Public Key Infrastructure (PKI) concepts
2. Understand principles of networks in relation to security	2.1 Identify the required items for BYOD policies. 2.2 Discuss mobile device management (MDM) tools and the mobile device life cycle 2.3 Identify types of security threats to cloud-based services 2.4 Explain the points of an effective disaster recovery plan for cloud based services 2.5 Determine the most effective continuous data protection (CDP) techniques, depending on network scenarios
3. Be able to deal with performance issues affecting Internet clients	3.1 Identify issues to consider when troubleshooting IP-enabled systems

	<p>3.2 Identify when to use various diagnostic tools for troubleshooting and resolving Internet problems</p> <p>3.3 Distinguish between client-side problems and server-side problems when troubleshooting services</p> <p>3.4 Troubleshoot cable and ADSL modem connectivity</p>
4. Understand basic networks in relation to hardware and maintenance	<p>4.1 Identify maintenance tasks that can help prevent computer system failures</p> <p>4.2 Explain the functions of the following in relation to Network Servers:</p> <ul style="list-style-type: none"> • Motherboards • Storage devices • Optical discs <p>4.3 Explain how to identify boot problems</p> <p>4.4 Explain why a hard drive must be partitioned and formatted.</p> <p>4.5 Identify Network File Systems (NFS)</p>
5. Be able to implement elements of network-based client operating systems	<p>5.1 Obtain proper licensing for operating systems and associated applications</p> <p>5.2 Recover from application failures</p> <p>5.3 Restart the system</p> <p>5.4 Connect peripherals required for the network</p> <p>5.5 Manage basic file and directory permissions</p> <p>5.6 Use file system management tools</p> <p>5.7 Delete temporary files manually and by using operating-system specific methods</p> <p>5.8 Back-up and restore files to prevent data loss</p>
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to understand how to maintain a network effectively by performing and understanding network maintenance issues.

Title:	Y/508/2286 Principles of Database Concepts
Level:	2
Credit Value:	1
Calculated GL:	1
Calculated TQT:	5
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand database concepts	1.1 Distinguish between relational and non-relational databases 1.2 Define relational database concept 1.3 Identify relationships between tables 1.4 Explain the purpose of SQL in querying databases 1.5 Identify database vendors
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to enable learners to understand the database concepts

Title:	R/508/2285 Principles of Internet Security
Level:	3
Credit Value:	1
Calculated GL:	3
Calculated TQT:	14
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand security issues related to Internet clients	1.1 Define the three major types of encryption: <ul style="list-style-type: none"> • WEP • WPA • WPA2 1.2 Identify ways that authentication, digital certificates, encryption and firewalls provide Web security 1.3 Identify ways in which encryption helps enforce: <ul style="list-style-type: none"> • data confidentiality • data integrity • non-repudiation to secure end-user transactions 1.4 Describe a computer virus 1.5 Explain how to protect computers from virus attack 1.6 Explain the functions of patches and updates to client software 1.7 Identify the process to follow when unexpected attachments are received 1.8 Identify steps to take when an attack is suspected 1.9 Identify how to lock a computer to increase security 1.10 Distinguish between a virus and a worm. 1.11 Explain the functionality of spyware
2. Understand security-related ethical and legal issues faced by IT professionals when using the internet	2.1 Describe privacy concerns related to using the internet 2.2 Identify appropriate use of company and personal systems. 2.3 Explain copyright issues

	<p>2.4 Explain the purpose of encrypting company transmissions</p> <p>2.5 Explain company encryption policies</p> <p>2.6 Discuss the "Right to Be Forgotten" and possible ramifications of damaging posts on the Internet.</p>
<p>Additional information about this unit</p> <p>N/A</p>	
<p>Unit aim (s)</p>	<p>The aim of this unit is to enable learners to understand the factors which effect internet security. Learners will also have the opportunity to use technologies which will allow safe browsing online.</p>

Title:	K/508/2289 Principles of networking fundamentals
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	8
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand basic data communication components	1.1 Define basic concepts in: <ul style="list-style-type: none"> • data network concepts • telephony network concepts 1.2 Identify basic network topologies 1.3 Define the Open Systems Interconnection reference model (OSI/RM) in terms of packet creation 1.4 Define the operation essentials of Transmission Control Protocol/Internet Protocol (TCP/IP) 1.5 Define the following types of Networks <ul style="list-style-type: none"> • local area network (LAN) • wide area network (WAN) 1.6 Identify how components of the current Internet infrastructure relate to each other 1.7 Identify the components of a Network Operations Center (NOC) 1.8 Compare and contrast server-based networks and peer-to-peer (P2P) networks 1.9 Define the following: <ul style="list-style-type: none"> • Distributed Architectures • Distributed Computing
2. Understand the role of networking hardware, and configure common hardware for operation	2.1 Distinguish among common cable types used in networking 2.2 Describe the uses of hardware and software connection devices 2.3 Explain the routing process, including static routing versus dynamic routing, interior versus exterior routing protocols 2.4 Identify TCP/IP network parameters

<p>3. Understand the relationships between IP addresses and domain names</p>	<p>3.1 Explain IP addressing covering the concept of uniqueness</p> <p>3.2 Identify the uses of:</p> <ul style="list-style-type: none"> • Public IP addresses • Private IP addresses <p>3.3 Compare and contrast IPv4 and IPv6</p>
<p>Additional information about this unit</p> <p>Hardware and Software Connection Devices</p> <ul style="list-style-type: none"> • Switch • Hub • Repeater • Router • Modem • Gateway • Bridge • NIC (Network Interface Card) • Cable • DSL • POTS (The Plain old telephone line) <p>Some of the above can also be Hybrid</p>	
<p>Unit aim (s)</p>	<p>The aim of this unit is to understand the basic fundamentals of networking.</p>

Title:	R/508/2321 Seek job opportunities in Information Technology
Level:	2
Credit Value:	1
Calculated GL:	2
Calculated TQT:	7
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand the job roles in the Information Technology industry	1.1 Explain the importance of education due to the nature of changes in the IT industry 1.2 Explain the responsibilities, tasks and skills needed of a: <ul style="list-style-type: none"> • Website analyst • Website manager • Database administrator • Server administrator • Help desk technician • Web marketing manager • Mobile web application developer • PC and mobile repair technician 1.3 Distinguish between a web architect and a web application developer 1.4 Distinguish between a security manager and a security analyst / consultant 1.5 Distinguish the difference between a common business organization chart, including identifying duties of a Chief Executive Officer (CEO) versus a Chief Operations Officer (COO)
2. Be able to search career opportunities in the Information Technology industry	2.1 Research career opportunities in the IT industry that relate to personal career goals 2.2 Carry out job searches 2.3 Create a up-to-date résumé in a suitable file format
Additional information about this unit	
N/A	

Unit aim (s)

The aim of this unit is to enable learners to understand the different IT job roles and responsibilities. This will inform learners of the range of job role opportunities available to them

Title:	Y/508/2322 Server side scripting on web servers
Level:	3
Credit Value:	1
Calculated GL:	1
Calculated TQT:	8
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand knowledge of languages used to provide database connectivity to websites	1.1 Compare popular client-side and server-side programming languages. 1.2 Define Common Gateway Interface (CGI) methods 1.3 Define database connectivity technologies 1.4 Distinguish between: <ul style="list-style-type: none"> • Tradition 2 tier models • N-tier architecture 1.5 Identify the advantages of n-tier architecture
2. Be able to run own web server	2.1 Investigate costs associated with placing and developing your own server 2.2 Identify costs associated with using a cloud service provider 2.3 Distinguish among <ul style="list-style-type: none"> • dedicated hosting • co-location • virtual servers 2.4 Activate features provided by managed services 2.5 Manage information relevant to a site
Additional information about this unit	
<ul style="list-style-type: none"> • JavaScript • PHP • Python • C family • Visual Basic • C# • CGI/PERL • COLD FUSION 	

- ASP
- PHP
- JSP

Unit aim (s)

The aim of this unit is to enable learners to understand how server side scripting is applied to create database connectivity.

Title:	F/508/2296 Understanding how to Use HTML5
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	8
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand technologies for enhancing the user's web experience	1.1 Identify the uses and benefits of various document formats and multimedia file formats 1.2 Describe how to insert an audio file into a Web page using the HTML5 element and attributes 1.3 Describe various HTML5 Application Programming Interfaces (APIs) 1.4 Demonstrate basic HTML5 API functionality using JavaScript and HTML5 elements
2. Be able use HTML5 and Cascading Style Sheets (CSS) to design web pages	2.1 Use CSS and HTML5 elements to create document structure 2.2 Distinguish between fixed-width and liquid design layouts 2.3 Create Web pages that rank highly for search engines that use spiders and screen readers 2.4 Identify ways to create pages for traditional and mobile-device browsers
Additional information about this unit	
<ul style="list-style-type: none"> • PDF • DOC • XLS • PPT • TXT • RTF • ODF(t) 	

Unit aim (s)

The aim of this unit is to enable learners to understand and use HTML5 to develop webpages in

Title:	F/508/2279 Understanding Internet Architecture
Level:	3
Credit Value:	1
Calculated GL:	1
Calculated TQT:	4
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand the infrastructure required to access the internet	1.1 Distinguish between a client and a server 1.2 Explain current internet protocols 1.3 Identify the infrastructure needed to support an internet client 1.4 Identify hardware and software connection devices to connect to the Internet 1.5 Explain benefits and drawbacks of cloud computing
2. Understand Internet communications protocols and their roles in delivering basic internet services	2.1 Explain the purpose of: <ul style="list-style-type: none"> • Remote Access protocols • Point-to-point protocols • Point-to-point protocol over Ethernet 2.2 Identify various types of internet bandwidth technologies 2.3 Describe how to map protocols to specific business services 2.4 Explain the uses of Really Simple Syndication (RSS) and Atom, including RSS/Atom clients and underlying technologies
3. Understand the basic principles of the Domain Name System (DNS)	3.1 Explain the purpose of the Domain Name System (DNS) 3.2 Identify internet domain names 3.3 Describe the hierarchical structure of DNS 3.4 Identify basic domain name server roles 3.5 Describe internet addresses 3.6 Define shared domains

Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to provide learners with the knowledge of how communication occurs over the Internet.

Title:	L/508/2298 Understanding Project Management in Information Technology
Level:	3
Credit Value:	2
Calculated GL:	2
Calculated TQT:	15
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand project management in relation to IT projects	1.1 Identify components of the project triangle 1.2 Identify components of a needs analysis 1.3 Define: <ul style="list-style-type: none"> • project scope • scope creep 1.4 Use project management software and charts to determine a project timeline. 1.5 Identify a cross-functional team and its relevance to an IT-based project 1.6 Explain models for information flow 1.7 Describe the reporting between IT and upper management 1.8 Identify the value of a Statement Of Work (SOW) order 1.9 Analyse social and practical implications of technical decisions 1.10 Identify ways that technical changes affect a business's revenue 1.11 Describe how to use the concept of Return On Investment (ROI) to justify IT-based expenses in relation to a budget
2. Understand the quality elements of project management	2.1 Define and perform a formal project review, including acceptance tests, determining success and implications of activities 2.2 Identify the importance of documenting a project 2.3 Explain how the concept of separation of duties can help ensure quality management

	<p>2.4 Explain how to relate technical information systems functions, concerns and capabilities to business concerns</p> <p>2.5 Identify the importance of quality management and assurance.</p> <p>2.6 Identify times when it is necessary to evaluate risks and escalate concerns</p>
<p>Additional information about this unit</p> <p>N/A</p>	
Unit aim (s)	<p>The aim of this unit is to enable learners to understand the concepts of project management and how to use its software appropriately.</p>

Title:	A/508/2300 Understanding Web Browsers
Level:	3
Credit Value:	1
Calculated GL:	1
Calculated TQT:	7
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Understand web browsers and functionality	1.1 Describe the functions and components of: <ul style="list-style-type: none"> • URN • URI 1.2 Identify ways to stop unwanted pop-up and pop-under windows in a browser 1.3 Define the functions of Secure Sockets Layer (SSL), Transport Layer Security (TLS) and other encryption methods in securing communication for various protocols 1.4 Explain the following terms: <ul style="list-style-type: none"> • Intranet • Extranet • Internet 1.5 Identify business uses of the web and web clients 1.6 Identify benefits and drawbacks of using alternative browsers 1.7 Explain the function of a CAPTCHA when requesting services from the web 1.8 Explain the purpose of anonymous browsing 1.9 Describe how anonymous browsing is carried out on a web browser
2. Be able to use web browsers	2.1 Navigate between and within websites. 2.2 Use multiple browser windows and tabs 2.3 Use common web browsers from installation 2.4 Use a web browser to: <ul style="list-style-type: none"> • Download files • Store files

	<p>2.5 Use common web browser software features and various clients</p> <p>2.6 Describe how to install common plug-ins, add-ons and viewers through upgrades</p> <p>2.7 Use different types file formats</p>
<p>Additional information about this unit</p> <p>File formats for graphics for example include:</p> <ul style="list-style-type: none"> • JPEG • WEBP • TIFF • GIF • BMP • PNG <p>Others commonly seen:</p> <ul style="list-style-type: none"> • HTML • HTM • CSS • EXE • DOC • TXT • ZIP • MPEG • MOV • PDF <p>Audio types:</p> <ul style="list-style-type: none"> • WAV • MP3 • Midi • RAM 	
Unit aim (s)	The aim of this unit is to enable learners to understand and use different web browsers and understand their functionality

Title:	F/508/2301 Using GUI HTML for Website Development
Level:	3
Credit Value:	1
Calculated GL:	1
Calculated TQT:	7
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to use Rapid Website Development tools	1.1 Evaluate a GUI HTML editor according to the W3C Authoring Tool Accessibility Guidelines 1.2 Validate HTML code 1.3 Use font and page appearance options in a GUI HTML editor 1.4 View source code 1.5 Preview web pages in a browser 1.6 Create HTML tables using a GUI HTML editor 1.7 Publish web pages and sites to a Web server 1.8 Evaluate various types of HTML editors that can edit files in <ul style="list-style-type: none"> • Mobile devices • Cloud services 1.9 Distinguish between mobile apps and mobile websites
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to enable learners to use GUI based HTML editors to rapidly develop websites.

Title:	L/508/2303 Using Internet Services
Level:	3
Credit Value:	1
Calculated GL:	5
Calculated TQT:	14
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to use different types of web search engines	1.1 Identify Boolean operators 1.2 Describe the relationship between Boolean operators and search engines 1.3 Conduct searches using operators common to search engines 1.4 Identify the importance of keywords 1.5 Conduct keyword searches 1.6 Distinguish between: <ul style="list-style-type: none"> • search sites • information portals • pages 1.7 Identify meta search engines, and the relationship with search engine ranking techniques 1.8 Explain how search engine sites use spiders to enhance search results. 1.9 Distinguish between: <ul style="list-style-type: none"> • authoritative peer reviewed • open peer reviewed sources 1.10 Give examples of: <ul style="list-style-type: none"> • primary resources • secondary resources • indexes
2. Be able to configure user customisation features in web browsers	2.1 Configure common browser preferences. To include: <ul style="list-style-type: none"> • fonts • home Pages • favourites • history • browser cache • image Loading • security settings

	<p>2.2 Identify advantages and disadvantages of using cookies</p> <p>2.3 Explain caching, including the implications of caching</p> <p>2.4 Identify issues to configure when configuring the desktop. To include:</p> <ul style="list-style-type: none"> • Proxy configuration • Client-side caching <p>2.5 Describe troubleshoot connectivity issues</p>
3. Know the principles of Personal Information Management (PIM)	<p>3.1 Identify ways that calendar and scheduling software helps organise IT-based activities</p> <p>3.2 Identify Personal Information Management (PIM) productivity applications, including tools for PCs and smartphones</p>
4. Be able to define and use networking and internet services	<p>4.1 Use remote-assistance clients and servers</p> <p>4.2 Configure and use instant messaging clients</p> <p>4.3 Define Peer-to-Peer (P2P) services</p> <p>4.4 Identify privacy concerns related to network communications</p> <p>4.5 Use Internet conferencing software</p> <p>4.6 Identify the benefits and drawbacks of text messaging and Short Message Service (SMS) applications</p> <p>4.7 Explain the various uses of mass e-mail and texting services</p> <p>4.8 Join and manage own participation in an e-mail list serve group</p>
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to enable learners to understand and use different internet services. By understanding how these services work it will allow learners to communicate more effectively as well as find what they want more efficiently.

Title:	D/508/2306 Website development, planning and testing
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	9
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to manage the website planning process with stakeholders	1.1 Work as a team member to develop pages and sites 1.2 Collaborate with members of an organisation to ensure sites meet requirements 1.3 Determine information and audience requirements for a site 1.4 Document a website plan 1.5 Communicate the website plan both orally and in writing 1.6 Document feedback improving the site where needed
2. Be able to test and analyse website performance issues	2.1 Ensure web documents are <ul style="list-style-type: none"> • tested • validated 2.2 Estimate download time for web pages 2.3 Test web pages in multiple browsers 2.4 Document results of website functionality testing
3. Be able to manage essential issues in developing and maintaining a website	3.1 Outline legal issues related to a website 3.2 Describe fundamentals of project management 3.3 Identify processes of pre-launch site/application functionality testing 3.4 Manage existing sites 3.5 Remove old sites and pages
4. Be able to plan and deliver presentations of your website	4.1 State ways to elicit useful feedback from management and customers 4.2 Use presentation aids and support materials in delivering the presentation 4.3 Clarify technical concepts for a non-technical audience

	<p>4.4 Use strategies to retain listener interest within the presentation</p> <p>4.5 Gain feedback</p> <p>4.6 Address diversity and corporate/organisational culture when communicating your message by customising delivery</p>
<p>5. Be able to deal with copyright and ethical issues when creating web pages</p>	<p>5.1 Obtain proper permissions from developers when repurposing content</p> <p>5.2 Explain the purpose of a Non-Disclosure Agreement (NDA)</p> <p>5.3 Identify situations in which it is necessary to consult with a legal team</p> <p>5.4 Identify ethical concerns when developing a website</p>
<p>Additional information about this unit</p> <p>N/A</p>	
<p>Unit aim (s)</p>	<p>The aim of this unit is to give learners the opportunity to learn the processes involved in planning and developing their websites. This will be developed so learners will present their websites to gain feedback.</p>

Title:	H/508/2310 Website Diagram and Design
Level:	3
Credit Value:	1
Calculated GL:	2
Calculated TQT:	11
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to create a web page.	1.1 Relate the history of mark-up languages to current techniques and technologies 1.2 Identify the format and various versions of HTML 1.3 Use HTML elements and tags to format paragraphs and text. 1.4 Create HTML hyperlinks for: <ul style="list-style-type: none"> • text • images • local files • remote sites 1.5 Format HTML tables to present information 1.6 Define the Document Object Model (DOM) and its relationship to Dynamic HTML 1.7 Add comments to HTML code and document page/site creation 1.8 Explain the importance of consistently developing to a single W3C standard 1.9 Add third-party applications to own web page 1.10 Identify ways that a web browser can become an application delivery platform
2. Be able to use, create, edit images and audio to HTML files	2.1 Incorporate graphical images into HTML pages 2.2 Distinguish between the uses and benefits of various graphic file formats 2.3 Add tiled images and colours to web page backgrounds 2.4 Create client-side image maps, including linking them 2.5 Perform image formatting techniques

	<ul style="list-style-type: none"> 2.6 Insert horizontal rules into web pages 2.7 Distinguish between raster and vector graphics 2.8 Scan and edit hard copy sources and images 2.9 Identify steps for creating images 2.10 Identify benefits and drawbacks of using stock photography 2.11 Create a photo and portfolio management strategy
3. Be able to use design and colour principles for web pages	<ul style="list-style-type: none"> 3.1 Obtain input from stakeholders about acceptable technologies and colour combinations 3.2 Define the browser-safe colour palette 3.3 Identify ways that colour affects web pages 3.4 Show the impact of colour combinations to various audiences and cultures 3.5 Evaluate web page design and layout
4. Understand Extensible Mark-up Language (XML)	4.1 Describe the functionality of XML
5. Be able to create website diagrams and accessibility	<ul style="list-style-type: none"> 5.1 Create an initial website diagram 5.2 Verify compliance with government and industry accessibility standards 5.3 Validate webpage design according to technical and audience standards adopted by employers 5.4 Verify website usability, view ability and browser compatibility 5.5 Identify the challenges of designing websites for mobile devices
6. Understand how to apply Cascading Style Sheets (CSS) to webpages	<ul style="list-style-type: none"> 6.1 Explain how to structure web documents with CSS 6.2 Identify ways to apply styles with CSS
Additional information about this unit	
N/A	
Unit aim (s)	The aim of this unit is to enable learners to understand the issues involved in Website design as well giving learners the opportunity to develop their own websites.

Title:	J/508/2297 Wireless networking and privacy protection
Level:	3
Credit Value:	1
Calculated GL:	1
Calculated TQT:	4
Learning Outcomes The learner will:	Assessment Criteria The learner can:
1. Be able to use wireless networks	1.1 Distinguish between: <ul style="list-style-type: none"> • ad-hoc • Infrastructure mode 1.2 Identify the function of a wireless access point (WAP) 1.3 Connect wireless networks to standard wired LANs 1.4 Outline benefits and drawbacks of <ul style="list-style-type: none"> • Wired Equivalent Privacy (WEP) • Wi-Fi Protected Access 2 (WPA2). • Secure Set Identifier (SSID) 1.5 Use a Secure Set Identifier (SSID) 1.6 Identify the purpose of MAC address filtering 1.7 Evaluate the practicality of a wireless LAN in an organisation 1.8 Troubleshoot wireless connectivity 1.9 Implement a wireless network 1.10 Explain the relationship between mobile devices and the cloud, including advantages and disadvantages 1.11 List the benefits of 4G covering: <ul style="list-style-type: none"> • networks • mobile hotspot devices
2. Be able to protect privacy protection on the Internet	2.1 Define phishing and pharming 2.2 Identify ways to avoid becoming a victim 2.3 Identify ways to avoid anti-social activity 2.4 Use encryption technology to secure communications
Additional information about this unit	
N/A	

Unit aim (s)

The aim of this unit is to provide learners with the opportunity to understand and set up a wireless network as well as explain the personal privacy issues relating to the internet