About City & Guilds
City & Guilds is the UK’s leading provider of vocational qualifications, offering over 500 awards across a wide range of industries, and progressing from entry level to the highest levels of professional achievement. With over 8500 centres in 100 countries, City & Guilds is recognised by employers worldwide for providing qualifications that offer proof of the skills they need to get the job done.

City & Guilds Group
The City & Guilds Group includes City & Guilds, ILM (the Institute of Leadership & Management) which provides management qualifications, learning materials and membership services, NPTC which offers land-based qualifications and membership services, and HAB (the Hospitality Awarding Body). City & Guilds also manages the Engineering Council Examinations on behalf of the Engineering Council.

Equal opportunities
City & Guilds fully supports the principle of equal opportunities and we are committed to satisfying this principle in all our activities and published material. A copy of our equal opportunities policy statement Access to assessment and qualifications is available on the City & Guilds website.

Copyright
The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute 2007 and may not be copied, reproduced or distributed without prior written consent.

However, approved City & Guilds centres and learners studying for City & Guilds qualifications may photocopy this document free of charge and/or include a locked PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching learners working towards a City & Guilds qualification, or for internal administration purposes
- learners may copy the material only for their own use when working towards a City & Guilds qualification
- the Standard Copying Conditions on the City & Guilds website.

Please note: National Occupational Standards are not © The City and Guilds of London Institute. Please check the conditions upon which they may be copied with the relevant Sector Skills Council.

Publications
City & Guilds publications are available on the City & Guilds website or from our Publications Sales department at the address below or by telephoning +44 (0)20 7294 2850 or faxing +44 (0)20 7294 3387.

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds’ products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

City & Guilds
1 Giltspur Street
London EC1A 9DD
T +44 (0)20 7294 2800 www.cityandguilds.com
F +44 (0)20 7294 2400 enquiry@cityandguilds.com
## Contents

### Unit 046 Designing and creating advanced websites

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syllabus overview</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Outcome 1</td>
<td>Explain the fundamentals of advanced web page development</td>
<td>3</td>
</tr>
<tr>
<td>Outcome 2</td>
<td>Undertake formal user requirements analyses</td>
<td>4</td>
</tr>
<tr>
<td>Outcome 3</td>
<td>Use appropriate development tools to implement and test interactive web pages incorporating advanced design and information presentation techniques</td>
<td>5</td>
</tr>
<tr>
<td>Outcome 4</td>
<td>Use graphics applications to create and manipulate images</td>
<td>6</td>
</tr>
<tr>
<td>Outcome 5</td>
<td>Maintain and evaluate web sites</td>
<td>7</td>
</tr>
</tbody>
</table>
Unit 046  Designing and creating advanced websites

Syllabus overview

Rationale
The aim of this unit is to provide candidates with an advanced level of skills and knowledge to competently prepare for, perform or supervise the performance of others in a variety of web site tasks using Information and Communication Technologies (ICT). Candidates will develop a more in depth understanding of web site design and the operating system in everyday usage and the ability to work in a supervisory role performing advanced tasks with a high degree of competence, using ‘problem solving’ skills and giving direction to others.

Learning outcomes
There are five outcomes to this unit. The candidate will be able to:

• Explain the fundamentals of advanced web page development
• Undertake formal user requirements analyses
• Use appropriate development tools to implement and test interactive web pages incorporating advanced design and information presentation techniques
• Use graphics applications to create and manipulate images
• Maintain and evaluate web sites

Guided learning hours
It is recommended that 90 hours should be allocated for this unit. This may be on a full time or part time basis.

Connections with other qualifications
This unit contributes towards the knowledge and understanding required for the following qualifications:

• N/SVQ in Customer Service, units
  o 201, 202, 203, 204
• ICS Customer Service Technical Certificate, units
  o 1.1, 1.2, 1.3, 1.4, 1.5, 1.6
  o 2.1, 2.4, 2.5, 2.7
  o 3.3, 3.4, 3.5

Assessment and grading
This unit will be assessed by an assignment covering practical skills.
Unit 046  Designing and creating advanced websites
Outcome 1  Explain the fundamentals of advanced web page development

Practical skills
The candidate will be able to:

1  describe how web pages can be made more interactive.(using eg: VRML, DHTML and Java applets)
2  explain the purposes of XML
3  outline the different uses of scripting languages (eg: CGI, VB Script, JavaScript)
4  explain scripting techniques used to interface a web page with a database to enable the presentation or interchange of up-to-date information.
Unit 046  Designing and creating advanced websites
Outcome 2  Undertake formal user requirements analyses

Practical skills
The candidate will be able to:

1. create ‘Terms of Reference’ for clients to include:
   a. a statement of the requirement
   b. a design for the web page using a suitable methodology eg: storyboarding.
   c. style sheets describing the formats of text and paragraphs eg: font style, type, size and colour, paragraph indents, line spacing, etc. to promote consistency within the web page.
   d. an appropriate structure diagram demonstrating the linking structure of the web page eg: linear, hierarchical, mesh

2. produce project plans for the incremental development of web pages including the gathering of suitable resources and timeframes including where appropriate the use of other people.

Underpinning knowledge
The candidate will be able to:

1. explain the relevance, importance and contents of a ‘Terms of Reference’, when creating a web page for a third party

2. recognise the different components of a Terms of Reference.

3. explain the importance of a design style sheet when working either to a specification or within a team environment.

4. describe the constraints and limitations that must be considered when producing a web page (eg: file size/download times, timescale of production, quality of image resources).
Unit 046  Designing and creating advanced websites
Outcome 3  Use appropriate development tools to implement and test interactive web pages incorporating advanced design and information presentation techniques

Practical skills
The candidate will be able to:
create web sites compatible with a range of browsers:
  a  providing both a frame based and a non-frame based interface
  b  incorporate JavaScript into a web page to achieve effects eg:
      i  scrolling text
      ii  rollover button graphics
  c  incorporate a Java applet into a web page (eg: expanding menu tree)
  d  using Dynamic HTML to enhance the interactivity or appeal of a web page eg
      i  layers
      ii  cascading style sheets (css)
  e  interfacing a web page to a database in order to provide a web page presentation of responses to a simple query, eg:
      i  a telephone number linked to a name
      ii  a product price or quantity in stock from a product code
      iii  library book availability
  f  incorporating into web pages suitable forms to enable the gathering of feedback or other information from users of web pages

2 test web sites:
  a  verifying all links work
  b  using different browsers to preview pages and verify all components appear as expected.

Underpinning knowledge
The candidate will be able to:
1  explain the importance of maintaining cross-browser compatibility
2  describe the advantages and disadvantages of a frame based interface.
3  select appropriate data to be collected using a form
4  describe the terms quality, timeliness and accuracy when applied to data collected from a web site.
Unit 046  
Designing and creating advanced websites

Outcome 4  
Use graphics applications to create and manipulate images

Practical skills

The candidate will be able to:

1. create images to predefined specifications (pixel height/width; colour depth) suitable for inclusion in web pages eg: buttons used for linking
2. apply transparency to images
3. create animated GIF's for use within web pages.

Underpinning knowledge

The candidate will be able to:

1. explain the factors that affect the dimensions of a button, for example:
   a. quantity of text
   b. font type, size and style
   c. size and style of applied border
   d. available space for the button(s) on a web page
2. describe what is meant by the term anti-aliasing.
Unit 046  Designing and creating advanced websites
Outcome 5  Maintain and evaluate web sites

Practical skills
The candidate will be able to:
1. create appropriate plans for the effective periodic maintenance and updating of web sites
2. check that a web site satisfies the ‘Terms of Reference’
3. identify potential future enhancements to web sites
4. create suitable documentation for maintaining web sites to include, for each web page, a list of resources including the full path to a file name from a root directory of a web site.

Underpinning knowledge
The candidate will be able to:
1. explain the importance of documentation in maintaining a web site.
Use this form to track your progress through this unit.

Tick the boxes when you have covered each outcome. When they are all ticked, you are ready to be assessed.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Explain the fundamentals of advanced web page development</td>
<td></td>
</tr>
<tr>
<td>2 Undertake formal user requirements analyses</td>
<td></td>
</tr>
<tr>
<td>3 Use appropriate development tools to implement and test interactive web pages incorporating advanced design and information presentation techniques</td>
<td></td>
</tr>
<tr>
<td>4 Use graphics applications to create and manipulate images</td>
<td></td>
</tr>
<tr>
<td>5 Maintain and evaluate web sites</td>
<td></td>
</tr>
</tbody>
</table>

Candidate Signature ........................................ Date ........................................

City & Guilds Registration Number ........................................

Quality nominee (if sampled) ........................................ Date ........................................

Assessor Signature ........................................ Date ........................................

External Verifier Signature (if sampled) ........................................ Date ........................................

Centre Name ........................................ Centre Number ........................................