



CPD Modules: Utility Arboriculture (0041-06 to -13)

March 2022 Version 1.1

CPD Module Pack

CPD Modules at a glance

Industry area	Arboriculture
City & Guilds number	0041-06 to 013
Age group	18+
Entry requirements	<p>Candidates must hold the relevant City & Guilds 0038 qualification or hold the relevant City & Guilds AUA10 qualification (providing evidence of experience of working in industry subsequent to achieving the qualification) or hold an equivalent Ofqual regulated certificate of competence for each qualification they are adding CPD for</p> <p>Centres must ensure that any pre-requisites stated are met.</p>
Assessment	<p>To gain the CPD module, candidates must successfully achieve the following assessments:</p> <ul style="list-style-type: none"> • Practical skills test by an NPTC City & Guilds approved assessor
Grading	Pass only
Approvals	<p>Full centre approval</p> <p>Qualification approval</p>
Registration and certification	Registration and Digital Awarding of these CPD modules is through the Walled Garden and is subject to end dates.

Title	City & Guilds number
CPD Module in Utility Arboriculture Basic Electrical Knowledge	0041-06
CPD Module in Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards	0041-07
CPD Module in Utility Arboriculture Ground-based Pruning	0041-08
CPD Module in Utility Arboriculture Aerial Pruning	0041-09
CPD Module in Utility Arboriculture Assisted Tree Felling	0041-10
CPD Module in Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform (MEWP)	0041-11
CPD Module in Utility Arboriculture Surveyor	0041-12
CPD Module in ETR 132 Resilience Arboricultural Surveyor	0041-13

Version and date	Change detail
1.0 January 2022	First version
1.1 March 2022	<p>Amended typographical and formatting errors</p> <p>Moved Score Descriptors to become Section 4</p> <p>Moved Skills Test Sheets to Module content</p> <p>Added logo and space for assessment details to the Skills Test Sheets</p> <p>CPD Module Content amendments:</p> <p><i>Module 006</i> Topics 6 and 11 – all knowledge required</p> <p><i>Module 007</i> Topic 7 – amended to ‘sparse crown’ Topic 8 – amended to ‘sparse crown; and added ‘stem bleeds’ Topic 9 – added Giant Polypore</p> <p><i>Module 008</i> Topic 10 – added requirement for a dedicated electrical observer/lookout</p> <p><i>Module 011</i> Topic 11 rephrased</p> <p><i>Modules 008-013</i> - some topics removed where they are covered elsewhere</p>

Contents

1	Introduction	5
	Purpose of the CPD modules?	5
	CPD module structure	6
	CPD module pre-requisites	7
2	Centre requirements	8
	Approval	8
	Physical resources	8
	Age restrictions	9
3	Administration	10
	External quality assurance	10
	Malpractice	10
	Access arrangements and special consideration	11
4	CPD Module Skills Test Sheets and Score Descriptors	12
	Skills Test Sheets	12
	Score Descriptors	12
5	CPD Module Content	13
Module 006	Utility arboriculture basic electrical knowledge	13
Module 007	Utility arboriculture tree species recognition, growth characteristics and associated hazards	18
Module 008	Utility Arboriculture Ground-based Pruning	23
Module 009	Utility Arboriculture Aerial Pruning	29
Module 010	Utility arboriculture assisted tree felling	35
Module 011	Utility arboriculture use of a chainsaw from a Mobile Elevating Work Platform (MEWP)	40
Module 012	Utility Arboriculture Surveyor	47
Module 013	ETR 132 Resilience Arboriculture Surveyor	52
Appendix 1	Sources of general information	57

1 Introduction

Purpose of the CPD modules?

Area	Description
OVERVIEW	
Who are the CPD modules for?	Individuals who are qualified utility arboriculturists. As an industry requirement and under Provision and Use of Work Equipment Regulations (PUWER) are recommended to have refresher training every 3-5 years.
What do the CPD modules cover?	<p>Each CPD module will cover the appropriate practical skills required to meet legislation, industry technical standards and industry good practice.</p> <p>The Utility Arboriculture CPD modules are:</p> <ul style="list-style-type: none"> 0041-06 Utility Arboriculture Basic Electrical Knowledge 0041-07 Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards 0041-08 Utility Arboriculture Ground-based Pruning 0041-09 Utility Arboriculture Aerial Pruning 0041-10 Utility Arboriculture Assisted Tree Felling 0041-11 Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform (MEWP) 0041-12 Utility Arboriculture Surveyor 0041-13 ETR 132 Resilience Arboricultural Surveyor
How do candidates register on CPD modules?	Assessment Centres will register candidates on the applicable CPD module. When registering candidates, the candidates email address for the Digital Credential (DC) shall be required.
How are the CPD modules delivered?	<p>These CPD modules are delivered by NPTC/ City & Guilds approved assessors.</p> <p>The skills test can be done alongside or separately at the end of training.</p>
What is issued on successful completion of a CPD module?	<p>Each candidate will complete the appropriate skills test which will be scored. Each skills test has a minimum score for the CPD module to be achieved.</p> <p>Candidates achieving the minimum score requirement will be issued a CPD Module Digital Credential (DC) to the registered email which is claimed by their NPTC Assessment Centre.</p> <p>The assessor will complete a feedback form on the candidate's performance in the skills test with any recommendations required.</p>

CPD module structure

For the **CPD Module in Utility Arboriculture Basic Electrical Knowledge (0041-06)** candidates must be trained and complete the skills test in:

Module number	Module title
006	Utility Arboriculture Basic Electrical Knowledge

For the **CPD Module in Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards (0041-07)** candidates must be trained and complete the skills test in:

Module number	Module title
007	Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards

For the **CPD Module in Utility Arboriculture Ground-based Pruning (0041-08)** candidates must be trained and complete the skills test in:

Module number	Module title
008	Utility Arboriculture Ground-based Pruning

For the **CPD Module in Utility Arboriculture Aerial Pruning (0041-09)** candidates must be trained and complete the skills test in:

Module number	Module title
009	Utility Arboriculture Aerial Pruning

For the **CPD Module in Utility Arboriculture Assisted Tree Felling (0041-10)** candidates must be trained and complete the skills test in:

Module number	Module title
010	Utility Arboriculture Assisted Tree Felling

For the **CPD Module in Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform (MEWP) (0041-11)** candidates must be trained and complete the skills test in:

Module number	Module title
011	Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform (MEWP)

For the **CPD Module in Utility Arboriculture Surveyor (0041-12)** candidates must be trained and complete the skills test in:

Module number	Module title
012	Utility Arboriculture Surveyor

For the **CPD Module in ETR 132 Resilience Arboricultural Surveyor (0041-13)** candidates must be trained and complete the skills test in:

Module number	Module title
013	ETR 132 Resilience Arboricultural Surveyor

CPD module pre-requisites

Title	City & Guilds number	Pre-requisites - qualification in
CPD Module in Utility Arboriculture Basic Electrical Knowledge	0041-06	Utility Arboriculture Basic Electrical Knowledge
CPD Module in Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards	0041-07	Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards
CPD Module in Utility Arboriculture Ground-based Pruning	0041-08	Utility Arboriculture Ground-based Pruning
CPD Module in Utility Arboriculture Aerial Pruning	0041-09	Utility Arboriculture Aerial Pruning
CPD Module in Utility Arboriculture Assisted Tree Felling	0041-10	Utility Arboriculture Assisted Tree Felling
CPD Module in Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform (MEWP)	0041-11	Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform (MEWP)
CPD Module in Utility Arboriculture Surveyor	0041-12	Utility Arboriculture Surveyor
CPD Module in ETR 132 Resilience Arboricultural Surveyor	0041-13	ETR 132 Resilience Arboricultural Surveyor

2 Centre requirements

Approval

New centres will need to gain centre approval.

Existing City & Guilds centres who do not currently offer the Utility Arboriculture Certificates of Competence Qualifications, must go through the Qualification Approval (QAP) process.

For centres currently offering the Utility Arboriculture Certificates of Competence Qualifications (0038) there is a Fast-Track method of approval. Please email qasupport@cityandguilds.com for further information on the approval process

Centre staffing

Staff delivering these CPD Modules must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver these CPD Modules.

Assessment Guidance for the Assessor

Staff delivering these CPD Modules must be approved Certificate of Competence City & Guilds NPTC Assessors. These CPD Modules can only be assessed by an Assessor who is suitably qualified and meets the requirements of the awarding body.

Certificate of Competence City & Guilds NPTC Assessors must meet the following requirements:

- show competence and provide evidence of industry expertise in the qualification/s they wish to assess
- hold the qualification as a candidate and have been technically evaluated as an Assessor
- be up to date with their verification and relevant first aid
- demonstrate continuing technically relevant CPD

Compliance with these requirements is a pre-requisite for Assessors remaining on the list of approved Assessors.

Verification is a process of monitoring assessment; it is an essential check to confirm that the assessment procedures are being carried out in the way City & Guilds has laid down. The overall aim of verification is to establish a system of quality assurance that is acceptable in terms of both credibility and cost effectiveness and approved Assessors will be subject to a regular visit by the Verifier at a time when assessments are being undertaken.

A selection of assessment reports completed by the Assessor will be evaluated by a City & Guilds approved Quality Consultant.

Safe Practice

Appropriate PPE must be worn at all times.

All equipment must be operated in such a way that the Candidate, Assessor, other persons, animals, or other equipment are not endangered.

If these conditions are not observed this will result in the Candidate not meeting the required standard.

Validation of Equipment

Any item(s) equipment used for the assessment must comply with current legal requirements.

Additional information may be sought from the relevant manufacturer's instruction book, operators' manual, product label/database or any other Government/Government Agency publication.

Age restrictions

These CPD modules are for candidates aged 18+.

3 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make secure arrangements to receive, check and keep assessment material secure at all times, maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (e.g., disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity. Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*. Alternatively, please complete the form, JCQ/M1. Copies of this form can be found on the JCQ website: <http://www.jcq.org.uk>

Access arrangements and special consideration

We have taken note of the provisions of equalities legislation in developing and administering this specification.

We can make arrangements so that candidates with disabilities, special educational needs and temporary injuries can access the assessment. These arrangements must be made before assessment takes place.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the *JCQ access arrangements and reasonable adjustments and Access arrangements - when and how applications need to be made to City & Guilds* for more information. Both are available on the City & Guilds website:

<http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information, please consult the current version of the JCQ document, *A guide to the special consideration process*.

Language of examinations

City & Guilds has a responsibility to ensure that candidates can be assessed in the following languages only:

- English
- English in Northern Ireland
- English in Wales.

4 CPD Module Skills Test Sheets and Score Descriptors

Skills Test Sheets

Skills Test Sheets are provided with each module.

Score Descriptors

Points	Descriptor
1	A poor level of knowledge, with a severe lack of any practical experience, potentially terminated on the grounds of safety. It would be recommended that the candidate carries out no further work in this skill range until further training/assessment has been completed.
2	A less than sufficient level of technical knowledge, candidate shows some practical experience in the qualification subject. It would be recommended that further training/assessment should be sought.
3	There may be identifiable gaps in knowledge, but they would be able to show some practical experience in some, but not all instances. Some standard setting maybe carried out. Candidate has met the base line pass mark and should continue as directed in the workplace.
4	A good level of technical knowledge that has been acquired from relevant practical experience and theoretical sources. Candidate should continue as directed in the workplace.
5	Excellent all round theoretical knowledge of all aspects of the topic which is supported by very extensive practical skill and experience. Candidate should continue as directed in the workplace.

5 CPD Module Content

Module 006 Utility arboriculture basic electrical knowledge

1. Understand basic electrical knowledge for utility arboriculture

Topic 1

Carry out a risk assessment.

- Hazards, risks and controls relevant to the site task and machine.
- Emergency procedures relevant to the work site

Topic 2

State personal protective equipment requirements:

PPE that is required where appropriate maybe:

- High visibility clothing
- Head protection
- Eye protection
- Hand protection
- Foot protection
- Hearing protection
- Specialist equipment as specified by the network operator
- All PPE should conform to latest standards

Topic 3

State the definition of the Vicinity Zone:

Definition of the Vicinity Zone is:

- The zone around an exposed live circuit conductor which if maintained will prevent the danger of burn or electric shock
- The Live Zone is included within the measurement of the Vicinity Zone

Topic 4

State the Vicinity Zone distances for the following range of voltages:

The Vicinity Zone distances for the following range of voltages are:

- LV = 1m
- 11kV = 2m
- 33kV = 2.5m
- 66kV = 3m
- 132 kV = 3.5m
- 275 kV = 4m
- 400 kV = 5m

Topic 5

State the definition of the Live Zone: Definition of the Live Zone is:

- The zone around an exposed live circuit conductor where there is danger of burn or electric shock if any part of a person's body or non-insulated tools, they are using enters the zone

Topic 6

State the Live Zone distances for the range of voltages:

The Live Zone distances for the range of voltages are:

- LV = 0.3m
- 11kV = 0.8m
- 33kV = 0.8m
- 66kV = 1.0m
- 132kV = 1.4m
- 275kV = 2.4m
- 400kV = 3.1m

Topic 7

State the factors to consider when carrying out ground-based operations:

Factors to consider when carrying out ground-based operations maybe:

- Do not point chipper discharge shoot towards conductors or equipment
- Do not leave long branches on site where there is a possibility of them being handled later and breaching the Vicinity Zone
- Ensure that a clear path is left under conductors to allow access for future patrols and maintenance
- Do not stack timber adjacent to substation boundary fences that may allow climbing access
- Ensure that hanging branches are not left as a hazard for others
- Other

Topic 8

State how the Tree type and condition may change the electrical danger:

Tree type and condition may change the electrical danger because:

- Species – different sap levels e.g., willow high sap
- Spring - rising sap levels
- Full leaf/dead tree
- Trees with leaves may come into contact with the overhead line
- Other

Topic 9

State the actions to be taken in the event of an emergency:

Actions to be taken in the event of an emergency in the workplace may include:

- Stop work
- Assess the situation
- Do not endanger yourself or other people
- Inform first aiders
- Follow emergency procedures
- Contact emergency services
- Contact the network operator/landowner
- Informing supervisor
- Other

Topic 10

State the emergency equipment required on site:

Emergency equipment required on site may include:

- Telephone (with signal)
- First aid kit
- Fire extinguisher
- Spill kit
- Rescue equipment
- Other

Topic 11

State the emergency action required following contact with the electrical network:

Emergency action required following contact by either machinery, trees, equipment or personnel with live overhead lines or underground cables may include:

- Keep everyone at least five meters away from the scene of the incident
- Do not become a victim by going too close or attempting a rescue
- Be aware that the high voltage auto re-closer circuit breaker may have switched power back on and there will be a voltage gradient in the ground
- Post a watchperson (if applicable)
- Do not touch any broken conductors or equipment
- Contact network operator/owner of overhead line so the line can be made dead
- Only approach a casualty after the overhead line has been proven dead and earthed by the network operator
- Contact supervisor/line manager
- Other

Topic 12

State the action to take when rescuing a person from a low voltage line:

The action to take when rescuing a person from a low voltage line is:

- Consider pulling the persons or conductors clear using approved insulated rods – minimum of three 1.2m sections

Topic 13

State the action to take when rescuing a person from a high voltage line:

The action to take when rescuing a person from a high voltage line is:

- No attempt should be made to rescue the person if they are in contact with a high voltage line
- The circuit may also auto-re-close and there will be a voltage gradient in the ground
- Only approach a casualty after the overhead line has been proven dead and earthed by the network operator

Topic 14

State the information given to the network operator in an emergency:

Information that needs to be given to the network operator for the line to be made dead in case of emergency may include:

- Your name
- Explain what has happened
- Ask for the line to be made dead
- Give accurate location
- Give an accurate grid reference
- Give name and or number of overhead line

- Give pole numbers/equipment id
- Transformer/switch name/number
- Describe damage you can see
- Other

Module 006 Utility Arboriculture Basic Electrical Knowledge

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Basic Electrical Knowledge	Grade 1-5
1. Carry out a risk assessment specific to the site and task	
2. State personal protective equipment requirements	
3. State the definition of the vicinity zone	
4. State the vicinity zone distances for the range of voltages	
5. State the definition of the live zone	
6. State the live zone distances for the range of voltages	
7. State the factors to consider when carrying out ground-based operations	
8. State how the tree type and condition may change the electrical danger	
9. State the actions to be taken in the event of an emergency	
10. Identify the emergency equipment required on site	
11. State the emergency action required following contact with the electrical network	
12. State the action to take when rescuing a person from a low voltage line	
13. State the action to take when rescuing a person from a high voltage line	
14. State the information given to the network operator in an emergency	
Total Score	/70
Candidate must achieve a minimum of 3 points in each element and a score of 42 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

1. Understand tree species recognition, growth characteristics and associated hazards for utility arboriculture

Topic 1

Identify common species of broadleaved trees:

Common species of broadleaved trees may include:

- Oak
- Ash
- Beech
- Birch
- Sycamore
- Willow
- Lime
- Hawthorn
- Blackthorn
- Cherry
- Apple
- Alder
- Horse Chestnut
- Sweet Chestnut
- Hazel
- Rowan
- Holly
- Elm
- Poplar
- Other

Topic 2

Identify common species of coniferous trees:

Common species of coniferous trees may include:

- Cypress
- Pine
- Larch
- Fir
- Spruce
- Cedar
- Hemlock
- Yew
- Other

Topic 3

State typically slow growing tree species

Typically, slow growing tree species may include:

- Oak
- Beech
- Laburnum
- Box
- Yew
- Holly
- Hornbeam
- Other

Topic 4

State typically fast-growing tree species:

Typically, fast growing tree species may include:

- Ash
- Sycamore
- Sweet Chestnut
- Willow
- Birch
- Alder
- Leyland Cypress
- Other

Topic 5

Explain the significance of brittle stems in relation to growth in proximity to overhead lines:

The significance of brittle stems in relation to growth in proximity to overhead lines is:

- Weight of branches from growth, wind, snow can cause them to snap easily
- They can also break off early when cutting, especially if too large a piece is removed
- Other

Topic 6

State the hazards associated with climbing plants:

Hazards associated with climbing plants may include:

- Vegetation obscuring electrical equipment
- Vegetation could be live
- Vegetation obscuring tree/network defects
- Vegetation causing damage to electrical equipment

Topic 7

State Signs of ill-health in trees:

Signs of ill-health in trees may include:

- Leaf discoloration
- Crown die back
- Peeling and dead bark
- Sparse crown
- Fungal fruiting bodies

Topic 8

Identify potential hazards and defects, and their significance in relation to overhead conductors:

Potential hazards and defects, and their significance in relation to overhead conductors may include:

- Fungal fruiting bodies
- Cankers
- Dead wood
- Included bark
- Sparse crown
- Peeling and dead bark
- Stem bleeds
- Tight or weak forks
- Decay cavities - basal and crown
- Old pollards/topped and lopped trees
- Damaged roots and/or ground heave
- Cracks in branches
- Grey squirrel damage
- Other

Topic 9

Identify decay fungi:

Identification of decay fungi may include:

- *Ganoderma* (Artist's fungus)
- *Armillaria Mellea* (Honey fungus)
- *Inonotus hispidus* (Velvet fungus)
- *Kretzschmaria deusta* (Brittle cinder)
- *Laetiporus sulphureus* (Chicken of the woods)
- *Fomitopsis betulina* (birch polypore)
- *Meripilus giganteus* (Giant Polypore)
- Other

Topic 10

State how the presence of fungi may impact the tree and the work:

The significance of how the presence of fungi may impact the tree, work and the electrical network may include:

- Structural integrity of the tree
- Biosecurity
- Climbing safety
- Security of network

Topic 11

State why topping and lopping trees is considered bad practice:

Topping and lopping trees is considered bad practice because:

- Does not conform to BS3998
- Rapid sprout growth occurs, back into the lines
- It leaves the tree unsightly
- Unstable branch unions result
- Rot can set into stem causing tree to become a hazard
- Other

Topic 12

State The reasons for the correct sequence of cuts when undertaking pruning operations:
The reasons for the correct sequence of cuts when undertaking pruning operations may include:

- Control of the cut section
- Prevent tearing or ripping of the bark
- Ensure the final pruning cut can be carried out precisely

Topic 13

Explain different recognized pruning methods near lines and their applications:

Different recognized pruning methods near lines and their applications include:

Through pruning:

- Low voltage overhead lines in residential areas (ABC)
- Allows conductors to pass through the canopy allowing sufficient clearance between the tree and conductor

Under/amenity pruning:

- Amenity considerations in residential areas
- Removal of some branches, but retaining the general shape of the tree

Selective Branch Removal:

- Veteran/ancient trees
- Amenity considerations
- Mature slow growing species

Reduction:

- Hedgerows

Side pruning:

- Woodland or forest locations
- All branches on the line side of the tree removed by a pruning cut at the trunk or back to a specified clearance

Crown reduction:

- Trees directly under the line
- Growth directed away from conductors
- Alternative to removal where tree must be retained

Fell to ground:

- Complete removal of the tree

Module 007 Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Tree Species Recognition, Growth Characteristics and Associated Hazards	Grade 1-5
1. Identify common species of broadleaved trees	
2. Identify common species of coniferous trees	
3. State typically slow-growing tree species	
4. State typically fast-growing tree species	
5. Explain the significance of brittle species in relation to growth in proximity to overhead lines	
6. State hazards associated with climbing plants	
7. State signs of ill-health in trees	
8. Identify hazards and defects, and their significance in relation to overhead lines	
9. Identify decay fungi	
10. State how the presence of decay fungi may impact the tree and the work	
11. State why topping and lopping trees is considered bad practice	
12. State the reasons for the correct sequence of cuts when undertaking pruning operations	
13. Explain different recognized pruning methods near lines and their applications	
Total Score	/65
Candidate must achieve a minimum of 3 points in each element and a score of 39 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

1. Carry out utility arboriculture ground-based pruning

Topic 1

Carry out a risk assessment.

- Hazards, risks, and controls relevant to the site task and machine.
- Emergency procedures relevant to the work site

Topic 2

State the Information required regarding site arrangements to check prior to commencing work:

Information required regarding site arrangements to check prior to commencing work may include:

- Network operator aware of team location and operations
- Correct site /network location
- The required consents/ permissions are in place for works that are planned
- All required tools are available
- Tools and equipment in serviceable condition
- Staff competencies appropriate for the scheduled work
- Plan of work agreed with co-worker(s)
- Other

Topic 3

Explain how trees are electrically categorised:

Tree categories include:

Category A:

- Trees within the Vicinity Zone (including the Live Zone) at or above the level of conductors or associated equipment

Category B:

- Trees outside but capable of breaching the Vicinity Zone (including the Live Zone) adjacent to conductors or associated equipment

Category C:

- Trees within the Vicinity Zone (including the Live Zone) that are beneath the conductors or associated equipment

Category D:

- Trees outside the Vicinity Zone with no potential of breaching the Vicinity Zone

Document for reference:

- G55

Topic 4

State the electrical ground-based methods of work required for all tree categories:

The electrical ground-based methods of work required for all tree categories may include:

Procedures for category A trees:

With the line live the method of work should be established by incorporating the following control measures:

- Where the voltage is greater than 33kV then the works will be carried out dead. The only exception to this will be where no branches breach the Live Zone and there is further supervision and a method statement approved by the Network Operator that ensures there is no breach of the Live Zone
- Branches can be reduced by using approved Insulated Tools
- Approved Insulated Tools may only be allowed to be used in the Live Zone where a procedure approved by the Network Operator is in place
- If branches protrude through the Vicinity Zone and up above the height of the Vicinity Zone and overhang the extent of the Live Zone, then the works will be carried out dead
- Where Approved Insulated Tools or any cut materials have the potential to cause a phase to phase or phase to earth flash over, then the length of cut section must be determined by risk assessment and recorded: particularly considering distances between phases
- A dedicated lookout grounds person capable of stopping work will be required to ensure that the control measures are being adhered to
- Works must be planned such that contact with electrical equipment is avoided
- The saw head should not be used in the Live Zone or on thin branches less than 25mm diameter that protrude into the Live Zone; this prevents excessive movement and unintentional contact of branches with conductors

Procedure for category B trees:

With the line live the method of work should be established by incorporating the following control measures:

- In the circumstance where there is extensive overhang which cannot be removed using an approved method over the Live Zone then works shall be carried out dead
- full account of the weather conditions must be taken
- control measures should, where necessary, include preparatory work to remove branches in a logical manner to avoid the risk of small branches cut higher up in the crown outside the Vicinity Zone bouncing or cartwheeling onto the line
- if branches have the potential to breach the Live or Vicinity Zone, then only small sections should be removed to avoid a phase-to-phase contact or damage to the network, the maximum length of cut section should be recorded on the risk assessment and a dedicated observer capable of stopping work must be used
- Straight fell trees away with appropriate control measures (such as the use of a non-return system) to ensure no breach of the Vicinity Zone. The suitability of any such procedures must be approved by the Network Operator

Procedure for category C trees:

With the line live the method of work should be established by incorporating the following control measures:

- Remove branches in the Live Zone with approved insulated tools
- If the trees are below the level of the Live Zone, with no possibility of breaching the Live Zone then they may be felled or pruned with non-insulated tools such as a chainsaw
- If the tree to be felled is below the level of the Live Zone, but has a possibility of breaching the Live Zone, then remove the branches with Approved Insulated Tools prior to felling

Procedure for category D trees:

With the line live the method of work should be established by incorporating the following control measures:

- Use non-insulated tools and avoid any breach of the Vicinity Zone by operatives, tools, or equipment

Topic 5

Identify the condition and potential defects of the overhead line:

Identification of the condition and potential defects of the overhead line may include:

- Overhead line inspected for defects
- Broken or damaged conductors
- Irregular spacing of conductors
- Ground clearance
- Damaged or rotten poles
- Condition of stays
- Other

Topic 6

Inspect and assemble insulated rods: Inspection and assembly of insulated rods to include:

- Approved by network operator for work to be carried out
- Checked, inspected, and assembled
- Joints fit securely
- Voltage rating checked
- Unique identification numbers checked
- Date of inspection checked
- Understand and ensure the effectiveness of insulated inserts is maintained
- Number of rods appropriate for the task

Topic 7

State the minimum number rods required for working up to 11kv and up to 33kv:

The minimum number rods required for working up to 11kv and up to 33kv are:

- 3 rods (LV and 11kv)
- 4 rods (33kv)

Topic 8

Select and wear Personal Protective Equipment as appropriate:

- High visibility clothing
- Head protection
- Eye protection
- Hand protection
- Foot protection
- Hearing protection

Topic 9

Explain the use of appropriate cuts and reasons for correct target pruning:

The use of appropriate cuts when undertaking pruning operations maybe:

- To control the cut section
- To prevent tearing or ripping of the bark
- To ensure the final (target) pruning cut can be carried out precisely
- Other

Reasons for correct target pruning may include:

- Preserves the branch bark collar and trees' defenses against decay
- Allows the wound to callus over
- Stubs and flush cuts allow decay to enter
- Stubs and flush cuts encourage sprout growth
- Stubs and flush cuts leave tree looking unsightly
- Other

Topic 10

Use pruning/ lopping head with insulated rods in close proximity to electrical apparatus:

- Insulated rods assembled
- Insulated insert correctly positioned in the pulling cord
- Plan of work agreed with a co-worker to pull cord as required
- Pruning head positioned to avoid risk of conductor clashing or flash over
- Ensure that there is good positive communication prior to and during pruning operations
- Twigs and branches cut at pre- determined lengths to avoid the risk of a flash over
- A dedicated electrical observer/lookout capable of stopping work must be used as appropriate
- Control hook can be used with a second set of insulated rods by an assistant to steady, lift or pull branches being pruned.
- Longer lengths of branches can be cut if they will not either hang up on the line or cause a flashover
- Selected branches pruned to give the specified clearance from the overhead line
- Awareness of requirement to undertake risk assessment to ensure no damage to overhead line where branches go through a line
- Permission for the removal of any branches hung up on the line must be obtained from the network operator
- Awareness of need to clean rods/insulators to ensure all contamination is removed if laid on ground during operations
- Rods inspected for damage on completion of operation

Topic 11

Use pruning saw with insulated rods in close proximity to electrical apparatus:

- Insulated rods assembled
- Plan of work agreed with a co-worker if pruning hook or pull rope is used
- Co-worker instructed to use insulated rods and control hook to ensure the branch falls outside the Vicinity Zone, if appropriate
- Saw position near to the base of the branch to prevent bouncing/ whipping
- Side/ undercut made, release cut made, final pruning cut made
- Branches pruned to intersections for directional pruning
- Branches cut in sections to avoid risk of flash over, damage to conductors or apparatus or clashing of conductors
- Pruning saw positioned to avoid risk of conductor clashing or flash over
- Selected branches pruned to give the specified clearance from the overhead line
- Cut sections prevented from being caught on the overhead line
- Ensure the saw head is not used in the Live Zone
- Ensure the saw head is not used on branches less than 25mm into the Live Zone

Topic 12

Work in a way which maintains health and safety and is consistent with relevant legislation and industry good practice:

- All activities must be completed in a way which protects the environment, operator, and those around them

Module 008 Utility Arboriculture Ground-based Pruning

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Utility Arboriculture Ground-based Pruning	Grade 1-5
1. Carry out a risk assessment specific to the site and task	
2. State the information required regarding site arrangements to check prior to commencing work	
3. Explain how trees are electrically categorized	
4. State the electrical ground-based methods of work required for all tree categories	
5. Identify condition and potential defects of the overhead line	
6. Inspect and assemble insulated rods	
7. State the minimum number of rods required for working up to 11kv and 33kv	
8. Select and wear Personal Protective Equipment	
9. Explain the use of appropriate cuts and reasons for correct target pruning	
10. Use lopper head with insulated rods in close proximity to electrical apparatus	
11. Use pruning saw with insulated rods in close proximity to electrical apparatus	
12. Work in a way which maintains health and safety and is consistent with relevant legislation and industry good practice	
Total score	/60
Candidate must achieve a minimum of 3 points in each element and a score of 36 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

1. Carry out utility arboriculture aerial pruning

Topic 1

Carry out a risk assessment.

- Hazards, risks, and controls relevant to the site task and machine
- Emergency procedures relevant to the work site

Topic 2

State industry guides relevant to aerial tree pruning:

Industry guides relevant to aerial tree pruning are:

- AA technical guide 1 Tree climbing and aerial rescue
- AA technical guide 2 Use of tools in a tree
- Tree work recommendations BS3998

Topic 3

Describe site zoning in relation to on-site preparation:

Work site layout factors to consider may include:

- Work zone: an area where hazards may be encountered
- Drop zone: an area where it is anticipated materials may fall
- Exclusion zone: the overall operational area

Topic 4

Perform a tree condition assessment:

Potential hazards that may be encountered may include:

- Evidence of cavities, decay or decay fungi
- Deadwood and broken branches
- Dead or flaking bark
- V shaped unions
- Cracks
- Nesting insects
- The presence of power lines or telephone wires
- Targets and obstacles underneath the tree

Topic 5

Discuss a working at height assessment:

Working at height assessment may include:

- Avoid work at height - can the work be carried out from ground level?
- Prevent falls - the use of a mobile elevating work platform (MEWP) to prevent a fall
- Minimise the consequence of a fall - the use of suitable equipment minimises the distance and consequence of a fall
- Planned and organised operation
- Rescue methods considered
- Competent persons
- Selection and inspection of equipment

Topic 6

Explain the basic principles of target pruning: Basic principles of target pruning are to:

- Simulate the trees' natural ability to shed branches
- Leaves the branch bark ridge and collar intact
- Allow complete doughnut of callus wood to form
- Allow protection boundary to develop inside collar
- Cuts carried out in accordance with industry standard and job
- Specification
- Other

Topic 7

Explain the importance of accurate and appropriate cuts when pruning:

Importance of accurate and appropriate cuts when removing branch material may include:

- Control
- Preventing splitting
- Preventing tearing
- Job specification BS3998 are met
- Other

Topic 8

Explain different cuts and when they may be used:

Cuts that maybe used and their application:

Sink cut:

- Directional sink with back cut retaining hinge which aide's direction used on free fall and hand held sections

Step cut:

- Two over lapping cuts used on free fall and handheld sections

Inboard:

- Finishing cut towards main stem, reducing risk of saw being taken

Out board:

- Finishing cut away from main stem, timber falls flat and reduces the risk of tearing

V cut:

- Two joining directional sinks with back cut, used on smaller diameter stems under tension

Holding cut:

- Sink cut with retained hinge and hold at the rear, used on larger diameter stems under tension

Topic 9

Demonstrate knowledge of briefing the ground staff:

The points that the climber must discuss when briefing the ground staff may be:

- The contents of the electrical risk assessment including updates
- The contents of the site-specific risk assessment
- Emergency procedures
- Individual responsibilities
- Aerial rescue provision
- Second climber has climbing equipment on site
- The tree hazard evaluation
- The planned method and sequence of work
- Means of communication established

Topic 10

Explain how trees are electrically categorised:

Tree categories include:

Category A:

- Trees within the Vicinity Zone (including the Live Zone) at or above the level of conductors or associated equipment

Category B:

- Trees outside but capable of breaching the Vicinity Zone (including the Live Zone) adjacent to conductors or associated equipment

Category C:

- Trees within the Vicinity Zone (including the Live Zone) that are beneath the conductors or associated equipment

Category D:

- Trees outside the Vicinity Zone with no potential of breaching the Vicinity Zone

Document for reference may be:

- G55

Topic 11

State the electrical aerial methods of work required for all tree categories:

The electrical aerial methods of work required for all tree categories may include:

Procedures for category A trees:

With the line live the method of work should be established by incorporating the following control measures:

- Aerial tree works will be carried out with the line made dead and earths applied, the only exception to this will be where no branches breach the Live Zone and there is further supervision and a method statement approved by the network operator that ensures there is no breach of the Live Zone
- Trees with branches in the Live Zone must not be climbed
- Trees with branches in the Vicinity Zone but not in the Live Zone should only be climbed where a procedure approved by the network operator is in place
- If branches protrude through the Vicinity Zone and up above the height of the Vicinity Zone and overhang the extent of the Live Zone, then the works will be carried out with the line dead
- A dedicated observer capable of stopping work will be required to ensure that the required control measures are being adhered to
- Works must be planned so that there is no possibility of a climber or tools breaching the Vicinity Zone

Procedure for category B trees:

With the line live the method of work should be established by incorporating the following control measures:

- In the circumstance where there is extensive overhang which cannot be removed using an approved method over the Live Zone then works shall be carried out dead
- Full account of the weather conditions must be taken
- Control measures should, where necessary, include preparatory work to remove branches in a logical manner to avoid the risk of small branches cut higher up in the crown outside the Vicinity Zone bouncing or cartwheeling onto the line
- If branches have the potential to breach the Live or Vicinity Zone, then only small sections should be removed to avoid a phase-to-phase contact or damage to the network
- The maximum length of cut section should be recorded on the risk assessment and a dedicated observer capable of stopping work must be used

- These trees can be climbed and dismantled with suitable control measures
- It must be ensured that in the event of a fall or swing there is no possibility of a climber breaching the Vicinity Zone
- A dedicated observer capable of stopping work must be used to maintain clearances if a climber or mobile elevating work platform is above the level of conductors

Procedure for category C trees:

With the line live the method of work should be established by incorporating the following control measures:

- Remove branches in the Live Zone with approved insulated tools before any aerial pruning
- If the trees are below the level of the Live Zone, then they may be climbed ensuring that no part of the climber's body, tools or equipment can breach the Vicinity Zone and that branches are not caused to breach the Live Zone
- A dedicated observer capable of stopping work should be used in this instance

Procedure for category D trees:

With the line live the method of work should be established by incorporating the following control measures:

- Use non-insulated tools and avoid any breach of the Vicinity Zone by operatives, tools, or equipment
- Inspect all equipment to be used and comment on the condition/checks made

Topic 12

Use access and positioning methods appropriate to the tree:

Prepare to climb the tree:

- Insulated rods used to position ropes or to position throw bag
- Ropes or throw-bags are not thrown in proximity to overhead line
- Anchor point positioned so that climber will swing away from conductors in event of a fall
- Ropes installed into the tree on the opposite side to the overhead line

All anchor points selected taking into consideration:

- Size, strength, and structure
- Position in relation to the parts of the tree to be accessed
- Use of equipment to minimise damage to the tree if appropriate

Establish initial anchor points considering:

- Suitability of the techniques used
- Accurate installation of equipment
- Organisation of ropes
- Safety and position of the anchor points
- Testing of the anchor points by thorough loading prior to ascent

Technique used considers:

- Efficient use of technique chosen
- Candidate is always attached to the tree in accordance with industry good practice
- Appropriate selection of anchor points
- Appropriate route taken up the tree
- Correct use of systems when changing anchor points
- Thorough load testing of new anchor points
- Risk of a fall is always managed
- Correct use of equipment

Topic 13

Climb the tree to work position: Access and climb tree to anchor points of suitable height and strength in accordance with AA technical guide TG1:

- Signals agreed (hand/radio)
- Tree climbed on opposite side to conductors
- Tree climbed facing the conductors whenever reasonably practical
- Ropes routed away from the conductors
- Work position established
- Ensure climber or any equipment does not infringe the Vicinity Zone
- Ensure climber or any equipment cannot infringe Vicinity Zone in the event of a fall
- Ensure that the climber does not work directly above any conductor
- Ensure a dedicated observer capable of stopping work if the climber works above the level of the conductors

Topic 14

Carry out pruning work in accordance with job specification, which may include:

- Ensure clear and concise communication
- Sections cut small enough for ease of handling
- Cut sections cast away from the conductors to prevent breach of Vicinity Zone
- All pruning operations carried out to prevent the climber and un-insulated equipment breaching the Vicinity Zone
- Safe/correct pruning methods applied
- Stated clearance achieved from the line

Topic 15

Perform accurate and appropriate cuts when pruning:

- Cut section controlled to prevent tearing or ripping of the bark
- Branch bark collar preserved
- If appropriate mirror the branch bark ridge
- Prune to encourage any new growth to grow away from the line

Drop zone used ensuring:

- No hanging branches left within tree
- Access equipment is not compromised/damaged
- Infrastructure is not damaged

Topic 16

Descend from the tree safely:

Descend from the tree and stow equipment safely and appropriately:

- Tree descended on opposite side to conductors
- Ropes removed ensuring no breach of vicinity zone
- Equipment stowed

Topic 17

Communicate appropriately with ground staff:

- Communication between climber and ground staff maintained when appropriate

Topic 18

Work in a way which maintains health and safety and is consistent with relevant legislation and industry good practice:

- All activities must be completed in a way which protects the environment, operator, and those around them

Module 009 Utility Arboriculture Aerial Pruning

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Utility Arboriculture Aerial Pruning	Grade 1-5
1. Carry out a risk assessment specific to the site and task	
2. State industry guides relevant to aerial tree pruning	
3. Describe site zoning in relation to on-site preparation	
4. Perform a tree condition assessment	
5. Discuss a working at height assessment	
6. Explain the basic principles of target pruning	
7. Explain the importance of accurate and appropriate cuts when pruning	
8. Explain different cuts and when they may be used	
9. Demonstrate knowledge of briefing the ground staff	
10. Explain how trees are electrically categorized	
11. State the aerial methods of work for each of the respective tree categories	
12. Use access and positioning methods appropriate to the tree	
13. Climb the tree to work position	
14. Carry out pruning work in accordance with job specification	
15. Perform accurate and appropriate cuts when pruning	
16. Descend from the tree safely	
17. Communicate appropriately with ground staff	
18. Worked in a way which maintains health and safety	
Total Score	/90
Candidate must achieve a minimum of 3 points in each element and a score of 54 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

1. Carry out utility arboriculture assisted tree felling

Topic 1

Carry out a risk assessment.

- Hazards, risks, and controls relevant to the site task and machine
- Emergency procedures relevant to the work site

Topic 2

Select appropriate equipment for the felling operation:

Appropriate equipment selected which may include:

- Chainsaw
- Ropes
- Strops, connectors
- Felling aids
- Pulleys/blocks
- Other

Topic 3

Describe the consequences of not carrying out an assisted fell operation in an organised and appropriate manner: Consequences of not carrying out an assisted fell operation in an organised and appropriate manner may include:

- Injury to operators/ third parties
- Damage to the electrical network
- Damage to property/ structures
- Damage to equipment
- Damage to the environment
- Financial loss
- Other

Topic 4

State the factors to consider when planning the felling operation:

Factors to consider when planning the felling operation may include:

- The conditions of the site, (terrain, soil, weather)
- safe working distance of at least two tree lengths from others not involved in the felling operation must be maintained
- No-one directly below on steep slopes
- operators on site should all have a whistle to raise the alarm in the event of an accident
- Ensure that all underground and overhead wayleaves have been accurately identified before felling commences
- Signs must be erected warning others of the work being carried out in accordance with Signing of Street works and Road Works Regulations
- Additional measures taken if any person could enter the two-tree length exclusion zone, e.g., banks person
- Other

Topic 5

Use approved insulated rods to install pulling system(s) to the tree to be felled and prepare for felling:

- Securely install attachment points within the tree to be felled using an appropriate method
- Attachment points installed to exert adequate leverage on the tree to be felled at a minimum of 1/3 of the height of the tree
- Consider stability, strength condition and location of anchor points

Topic 6

Position of pulling equipment appropriate to the task:

- Suitability of anchor points
- Position of pull system
- Re-direct pull system used as applicable
- Check compatibility of system
- Check system configuration
- System must be retrievable
- Non-return system
- Operators at a safe distance, and in an appropriate location

Topic 7

Pre-tension the restraint system:

The restraint system is tensioned to ensure:

- All parts are functional and correctly configured
- Adequate for the anticipated load
- Clear communication systems are established
- Rope system is free of obstructions
- Other

Topic 8

Demonstrate safe starting of the chainsaw:

Pre-start checks and setting of the machine to include:

- Chain tension and condition checked for safe and effective use
- Safety features checked for condition and function
- External nuts and bolts checked for security
- Chainsaw contains sufficient fuel and chain oil for operations
- Battery saw contains sufficient oil and charge
- Chainsaw is checked, started and function tested ready for use in accordance with manufactures information.

Topic 9

Explain the benefits of using a holding cut for assisted fell operations:

The reason for incorporating a back-hold technique may include:

- Reduces the risk of trapping the saw
- Reduces the risk of early release
- Gives the operator more time to fell the tree
- Re -evaluate escape route if required
- Gives time for the assist rope to be tensioned appropriately
- Other

Topic 10

Explain the use of felling aids as a backup for assisted felling:

Alternative felling aids and their use may include:

Wedges:

- Placed in felling cut and driven in to aid tree movement
- Other

Felling levers:

- Placed in the felling cut and lifted to aid tree movement
- Other

Topic 11

Explain the importance of clear communication during assisted felling operations:

Importance of clear communication may include:

- General site safety
- Accident prevention
- Job efficiency
- Operators understand roles and responsibilities
- Other

Topic 12

State the appropriate actions to be taken should the tree become hung-up:

Actions to be taken should a tree become hung up may include:

- Stop work
- Re-assess the situation
- Re-assess danger zones and escape routes
- If tree is in contact with the line, contact the network operator and seek further advice
- Use appropriate take down method

Topic 13

Carry out an assisted fell of a tree adjacent to an overhead line:

- Communication systems in place as appropriate
- No danger of the tree falling back onto conductors
- The felling method chosen and safe working zones
- Selection and preparation of escape routes
- A sink of the appropriate dimensions
- Felling cuts made with a suitable hold and felling aid employed using a safe and effective felling method
- A hinge being retained of adequate dimensions
- Appropriate aid tools are used
- Escape routes being used as soon as the tree begins to fall
- Site checked for safety once tree has fallen
- Stump height left appropriate to site specification

Topic 14

State alternative techniques used to deal with trees of varying size and condition:

Alternative techniques used to deal with trees of varying size and condition may include:

- Small trees leaning away or weighted away from the line can be felled with step cut or reducing V cut as appropriate
- Larger trees, when appropriate, can be felled with the aid of a winch, with the line dead

- Use wedges/felling aids to prevent a tree sitting back even when using a pulling device
- If the tree is unsuitable for felling away from the line use an appropriate dismantling technique with the line dead
- Tree felled with line dead, and conductors lowered (line drop)
- Other

Topic 15

Work in a way which maintains health and safety:

- All activities must be completed in a way which protects the environment, operator, and those around them

Module 010 Utility Arboriculture Assisted Tree Felling

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Assisted Tree Felling	Grade 1-5
1. Carry out a risk assessment specific to the site and task	
2. Select appropriate equipment for the felling operation	
3. Describe the consequences of not carrying out an assisted fell operation in an organised and appropriate manner	
4. State factors to consider when planning the felling operation	
5. Use approved insulated rods to attach pulling rope(s) to a tree to be felled	
6. Position and set up pulling equipment	
7. Pre-tension the restraint system to ensure all components are correctly configured	
8. Demonstrate safe starting of the chainsaw	
9. Explain the benefits for using a holding cut for assisted fell operations	
10. Explain the use of felling aids as a back-up for assisted felling	
11. Explain the importance of clear communication during assisted felling operations	
12. State the appropriate actions to be taken should the tree become hung-up	
13. Carry out an assisted fell of a tree adjacent to an overhead line	
14. State alternative techniques used to deal with trees of varying size and condition	
15. Work in a way which maintains health and safety	
Total Score	/75
Candidate must achieve a minimum of 3 points in each element and a score of 45 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

Module 011

Utility arboriculture use of a chainsaw from a Mobile Elevating Work Platform (MEWP)

1. Carry out utility arboriculture use of a chainsaw from a mobile elevated work platform (MEWP)

Topic 1

Carry out a risk assessment.

- Hazards, risks, and controls relevant to the site task and machine
- Emergency procedures relevant to the work site

Topic 2

State the Industry guides relevant to tree pruning from a MEWP:

Industry guides relevant to tree pruning from a MEWP to include:

- AA guide 5 Use of Mobile elevating work platforms (MEWP) in tree work
- Tree work recommendations BS3998

Topic 3

Carry out pre-use and running checks for the MEWP:

- Explain the meaning of the warning decals on the MEWP
- Explain the function of all the instruments and controls of the machine
- Carry out pre-use and running checks in accordance with the operator's manual

Topic 4

Site set up in accordance with the site requirements and risk assessment:

Site set up may include:

- Warning signs
- Traffic bollards
- Warning tape
- Barriers
- Other

Topic 5

Explain different cuts and when they may be used:

Cuts that maybe used and their application:

Sink cut:

- Directional sink with back cut retaining hinge which aide's direction

Step cut:

- Two over lapping cuts used on handheld sections

Inboard:

- Finishing cut towards main stem, reducing risk of saw being taken

Out board:

- Finishing cut away from main stem, timber falls flat and reduces the risk of tearing

Vertical:

- On upright or semi-upright timber. Can be one of the above cuts

Horizontal:

- On lateral stems. Can be one of the above cuts

V cut:

- Two joining directional sinks with back cut, used on smaller diameter stems under tension

Holding cut:

- Sink cut with retained hinge and hold at the rear, used on larger diameter stems under tension

Topic 6

State the potential defects that maybe present on the overhead line:

Potential defects that maybe present on the overhead line when being inspected may include:

- Broken or damaged conductors
- Irregular spacing of conductors
- Ground clearance
- Damaged or rotten poles
- Condition of stays
- Other

Topic 7

State the factors affecting the use of MEWPs in proximity to overhead power lines:

The factors affecting the use of MEWPs in proximity to overhead power lines may include:

- Use of MEWP approved by the network operator
- MEWP operator must be competent and authorised by the network operator.
- MEWPS may only be used in accordance with network operator guidance, including limitations of live and dead working and voltages
- Network operator control room shall be made aware of operator's daily whereabouts
- MEWPS should not be used in situations where parts of the machine would encroach the Vicinity Zone (unless appropriately earthed) or where there is imminent likelihood of electrical storm
- Competent second person should be available on-site to conduct a rescue

Topic 8

State the points to be considered when setting up the MEWP:

The points to be considered when setting up the MEWP may include:

- Ground conditions must be confirmed as appropriate for MEWP operation
- Position the MEWP using spreader plates so that it is out of the drop zone
- MEWP must never be positioned directly beneath energised conductors
- MEWP bucket shall never be positioned directly above energised conductors
- Operatives not within the MEWP bucket while it is being maneuvered/ positioned

Topic 9

Describe the points to be considered for safe operation of the MEWP:

The points to be considered for safe operation of the MEWP may include:

- No part of the MEWP shall ever breach the Vicinity Zone
- No part of any person's body shall ever breach the Vicinity Zone
- No tools or equipment except approved insulated tools shall breach the Vicinity Zone

- No person shall work directly above or below any live conductor
- A dedicated observer capable of stopping work must be used to maintain clearances
- drop zone positioned not to compromise the access equipment or infrastructure

Topic 10

State the emergency procedures involving a MEWP which is in contact with an overhead power line:

Emergency procedures involving a MEWP which is in contact with an overhead power line may include:

- Stop all work
- Inform the MEWP operator (if necessary)
- Inform the supervisor
- Ensuring no one touches the MEWP or attempts to use ground controls
- Move away from the immediate area of the machine
- Ensure that no one is directly beneath the conductors
- Keep all personnel at least five metres from the machine
- Contact the emergency control room to request emergency disconnection of power
- Other

Topic 11

State ways of dealing with an injured operator who is unable to bring themselves down

Ways of dealing with an injured operator who is unable to bring themselves down may include:

- Rescue operator with second MEWP if available
- Initiate manual override ground controls as per manufactures instructions
- Other

Topic 12

Explain how trees are electrically categorised: Tree categories to include:

Category A:

- Trees within the Vicinity Zone (including the Live Zone) at or above the level of conductors or associated equipment

Category B:

- Trees outside but capable of breaching the Vicinity Zone (including the Live Zone) adjacent to conductors or associated equipment

Category C:

- Trees within the Vicinity Zone (including the Live Zone) that are beneath the conductors or associated equipment

Category D:

- Trees outside the Vicinity Zone with no potential of breaching the Vicinity Zone

Topic 13

State factors to consider when pruning trees from a MEWP adjacent to power lines:

Considerations when pruning trees from a MEWP adjacent to power lines may include:

- All material must be handled to prevent anything entering the Vicinity Zone
- No work should be attempted directly above the Live Zone
- There must be no likelihood of any free-falling sections bouncing into the Vicinity Zone
- Handheld sections must be thrown away from the conductors avoiding the Vicinity Zone
- Cuts must be made accurately to ensure that sections break cleanly without tearing

Topic 14

State the process when dealing with vegetation which cannot be cut with a chainsaw/hand saw:

Dealing with vegetation which cannot be cut with a chainsaw/hand saw may include:

- Material must be cut using approved insulated tools
- The operator and all non-insulated equipment must remain outside the Vicinity Zone
- Appropriate pruning points are identified and the length of cut material is appropriate
- Dedicated observer capable of stopping work must be used to maintain clearances

Topic 15

Set up the MEWP as per manufacturers information and job specification:

Set up of the MEWP should include:

- As per manufacturers/operator's manual
- Appropriate PPE worn
- Set up position appropriate for intended operation
- Examination of ground conditions
- Deployment of stabilisers, outriggers, and jacks
- Use of extending axles where applicable
- Secure set up position
- Other

Topic 16

Operate the MEWP safely: Safe operation of the MEWP should include:

- All round observation
- Correct use of controls
- Control of basket
- Boom correctly slewed
- MEWP bucket elevated to suitable work position to carry out task
- Effective communication
- Other

Topic 17

Demonstrate a variety of cuts on branches in proximity to overhead lines:

Step cut and sink cut sections should be removed, taking the following points into account:

- Characteristics and properties of the wood allowed for
- Manageable sections selected
- Saw released from strop if applicable and attached to a supplementary anchor point
- Operator holding the saw using both the front and top/rear handles of the saw
- Side or reducing cuts used where appropriate
- Appropriate hinge left on sink cut sections
- Position of cuts on step cut sections and a complete overlap of cuts achieved
- The branch collar and/or branch bark ridge is identified when pruning
- Chain brake applied or saw switched off whilst breaking and casting sections
- Operator maintains awareness of activity below
- Ensure clear and concise communication
- Sections cut small enough for ease of handling
- Sections cast away from the conductors to prevent breach of Vicinity Zone
- All pruning operations carried out to prevent the mobile elevated work platform and un-insulated equipment breaching the Vicinity Zone
- Prune to encourage any new growth to grow away from the line
- Handheld sections are cast into a predetermined area

Topic 18

Demonstrate how to lower the MEWP in a controlled manner:

Lowering of the MEWP should consider:

- Platform slewed and lowered in correct sequence
- Platform lowered slowly and carefully
- Platform stowed and where applicable locked in
- Travel position
- Other

Topic 19

Demonstrate how to convert the MEWP to transport position:

Convert the MEWP to transport position in accordance with the operator's manual:

- Reference to operator's manual
- Appropriate PPE used
- Debris removed
- Stabilisers retracted and secure
- Warning lights off
- Platform checked for roadworthiness as appropriate

Topic 20

Explain the reasons for inspecting the MEWP after use:

The reasons for inspecting the MEWP after use maybe:

- Remove any operational debris from MEWP
- Identify damage that may have been caused through use
- Ensure vehicle is still roadworthy
- Other

Topic 21

Work in a way which maintains health and safety:

- All activities must be completed in a way which protects the environment, operator, and those around them.

Module 011 Utility Arboriculture Use of a Chainsaw from a Mobile Elevating Work Platform

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Activity number and description	Grade 1-5
1. Carry out a risk assessment specific to the site and task	
2. State industry guides relevant to using a chainsaw from a MEWP	
3. Carry out pre-use and running checks for the MEWP	
4. Site set up in accordance with site requirements and risk assessment	
5. Explain different cuts and when they may be used	
6. State the potential defects that maybe present on the overhead line	
7. State the factors affecting the use of MEWPs in proximity to overhead power lines	
8. State the points to be considered when setting up the MEWP	
9. Describe the points to be considered for safe operation of the MEWP	
10. State emergency procedures involving a MEWP which is in contact with an overhead power line	
11. State ways of dealing with an injured operator involving a MEWP which is not in contact with an overhead power line	
12. Explain how trees are electrically categorized	
13. State factors to consider when pruning trees from a MEWP adjacent to power lines	
14. State the process when dealing with vegetation which cannot be cut with a chainsaw or hand saw	
15. Set up the MEWP as per manufacturers information and job specification	
16. Operate the MEWP safely	
17. Demonstrate a variety of cuts on branches in proximity to overhead lines	
18. Demonstrate how to lower the MEWP in a controlled manner	
19. Demonstrate how to convert the MEWP to transport position	
20. Explain the reasons for inspecting the MEWP after use	
21. Work in a way which maintains health and safety	
Total Score	/105
Candidate must achieve a minimum of 3 points in each element and a score of 63 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

1. Understand utility arboriculture surveyor theory

Topic 1

Explain the Electricity At Work Regulation 14: 1989

The requirements of Regulation 14 Electricity At Work may include:

- Regulation 14, Justification of Live working (working on or near live conductors)
- It is unreasonable in all circumstances for the line to be dead
- It is reasonable in all circumstances for a person to work on or near the line while it is live
- Suitable precautions (including, where necessary, the provision of suitable protective equipment) are taken to prevent injury

Topic 2

State the Principles surrounding the Electricity Act 1989 Schedule 4, Paragraph 9:

Principles surrounding the Electricity Act 1989 Schedule 4, Paragraph 9 may include:

- Enables work to be carried out to trees and shrubs which obstruct or interfere with the electricity network, or represents a danger
- The network operator may give a 21-day notice to both the owner and the occupier requiring work to be carried out
- For work safety reasons network operators generally operate their own vegetation management programs, carrying out the work on behalf of landowners.
- Work in accordance with good arboricultural practice, doing as little damage as possible to trees, fences, hedges, and growing crops
- Cause felled trees, limbs, roots or cuttings to be removed in accordance with the directions of the landowner
- Any damage caused by the network operator must be made good
- Other

Topic 3

State the minimum clearances required by ENA TS 43-8 for climbable trees:

Minimum clearances required by ENA TS 43-8 for trees that can support a person or ladder may include:

- LV - 33kv = 3m
- 66kv = 3.2m
- 132kv = 3.6m
- 275kv = 4.6m
- 400kv = 5.3m

Topic 4

Explain the considerations when introducing yourself to the landowner:

Considerations when introducing yourself to the landowner may include:

- Give your name
- Proof of identity to owner
- Name of the company you are representing
- Name of the network operator

- Confirmation of landowner details
- Gain permission to access owners' grounds to assess work
- Other

Topic 5

State the reasons for tree clearance work carried out:

The reasons for tree clearance work carried out on behalf of the network operator may include:

- Legislation requires minimum clearances
- Network operator requires specific clearance
- Trees may be in contact with the line
- Public safety
- Maintain continuous supply
- Other

Topic 6

State areas where additional precautions might be required when visiting

Areas where additional precautions over and above the standard contact with the landowner might be required may include:

- Protected sites including Site of Special Scientific Interest (SSSI) etc
- European Protected Species (EPS) sites
- Network Rail sites
- Regional Forestry Commission land
- Quarries
- Other

Topic 7

Explain justification for restricted cuts:

Situations where a restricted cut may be justifiable may include:

- Minimum acceptable clearance
- Where requested by the landowner
- Environmental or planning controls are in place
- Where keeping a good form to the tree is important
- Other

Topic 8

State relevant wildlife and environmental legislation:

Relevant wildlife and environmental legislation may include:

- Wildlife and Countryside Act 1981
- Environmental Protection Act 1990
- The Countryside Rights of Way Act 2000 (England and Wales)
- The Nature and Conservation (Scotland) Act 2004
- The Conservation (Natural Habitats, &c.) Regulations 1994
- Other

2. Carry out utility arboriculture Surveyor practical skills

Topic 1

Carry out a risk assessment.

- Hazards, risks, and controls relevant to the site task and machine
- Emergency procedures relevant to the work site

Topic 2

Undertake a vegetation survey

Vegetation survey to include:

- Identify vegetation requiring work
- Identify vegetation in proximity to the overhead network that does not require work
- Identify Category A, B, C, D trees
- Correctly identify tree species, age and location
- Identify current clearance
- Clearance to be achieved
- Traffic management considerations
- Pedestrian/vehicle access
- Equipment required
- Estimation of work time and staff required
- Environmental considerations
- Other

Topic 3

Prepare an electrical risk assessment:

Electrical risk assessment may include:

- Category of tree works defined
- Justification for any live working
- Identification of any defects on the electrical system
- Identify any overhead equipment that does not comply with relevant legislation.
- Document all information

Topic 4

Prepare emergency procedure documentation:

Emergency procedures may include:

- Location of work site including address and post code
- Grid reference
- What 3 words
- Relevant meeting point
- Appropriate contact numbers for the network operator control room
- Mobile phones signal strength and battery checked throughout the course of the work
- Name/number of line/circuits
- Pole numbers
- Nearest substation
- Nearest landline
- Nearest accident and emergency unit

Topic 5

Prepare vegetation survey documentation:

Document details of trees/vegetation and associated reference numbers:

- Document details of trees/vegetation not requiring any work
- Record categories of trees/vegetation on site
- Prescribed clearances
- Live or dead working
- Detail traffic management provisions
- Detail prescribed pruning/felling methods
- Any dangerous overhang to be recorded
- Detail third party access provisions
- Record job timings and staff required
- Equipment needed (chipper, MEWP etc)

Topic 6

Produce accurate plans:

Plans to show but not limited to the following:

- Overhead network location
- Trees/vegetation/reference numbers
- Overhead/underground utilities
- Traffic management parameters
- Work zones (drop zone, exclusion zones, MEWP, chipper)
- Roads
- Properties
- Access/egress
- Emergency meeting point
- Significant hazards
- Other

Topic 7

Complete permission form:

Permission form to include:

- Clear and concise detail of work required and clearance to be achieved
- Details and justification of restricted cuts
- Access/egress routes confirmed
- Confirmation of disposal of arisings
- Identification of protection (TPO, conservation area, felling license etc)
- Landowner signature and date of consent

Module 012 Utility Arboriculture Surveyor

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Surveyor Theory	Grade 1-5
1. Explain the Electricity at Work Regulations (Regulation 14) 1989	
2. State principles surrounding the Electricity Act 1989 Schedule 4, Paragraph 9	
3. State the minimum clearances required by ENA TS 43-8 for climbable trees	
4. Explain the considerations when introducing yourself to the landowner	
5. State the reasons for tree clearance work being carried out	
6. State areas where additional precautions might be required when visiting	
7. Explain justification for the use of restricted cuts	
8. State relevant wildlife and environmental legislation	
Surveyor Practical	
1. Carry out a risk assessment specific to the site and task	
2. Undertake Vegetation survey	
3. Prepare electrical risk assessment	
4. Prepare Emergency procedure documentation	
5. Prepare vegetation survey documentation	
6. Produce accurate plans	
7. Complete permission form	
Total Score	/75
Candidate must achieve a minimum of 3 points in each element and a score of 45 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

1. Understand the requirements of ETR 132 Resilience Arboricultural Surveyor

Topic 1

Carry out a risk assessment.

- Hazards, risks, and controls relevant to the site task and machine
- Emergency procedures relevant to the work site

Topic 2

Explain the elements considered in an office-based pre-survey, prior to visiting site:

The elements covered with an office-based pre-survey, prior to visiting site may include:

- Landownership
- Environmental restrictions, e.g., SSSI
- Restricted areas
- Ancient monuments
- European protected species present on site
- Generation issues windfarms, solar
- Other utilities, infrastructure
- Other

Topic 3

Identify and demonstrate knowledge of **three** principal fungal decay organisms:

Identification and knowledge of principal fungal decay organisms may include:

Three to be identified:

Armillaria mellea (Honey Fungus):

- Host – wide range of conifers and broadleaves
- Area affected – lower stem
- Type of decay – white rot

Kretzschmaria deusta (Brittle Cinder):

- Host – wide range of broadleaves
- Area affected – buttresses and roots
- Type of decay – soft rot in early stages, a white rot can develop

Meripilus giganteus (Giant Polypore):

- Host – common on beech
- Area affected – main root structure
- Type of decay - white rot but with soft rot in early stages

Inonotus hispidus (Shaggy/Velvet Bracket):

- Host – broadleaves, mainly ash
- Area affected – upper stem and principal branches
- Type of decay – simultaneous white rot

Heterobasidion annosum (Fomes Root Rot):

- Host - range of conifers and broadleaves
- Area affected – roots then stem
- White pocket rot

Phellinus ignarius (Willow Bracket):

- Host – mainly willow
- Area affected – main stems
- Type of decay – white rot

Fomitopsis betulina (Birch Polypore):

- Host – birch
- Area affected – main stems
- Type of decay – brown rot

Fistulina hepatica (Beefsteak Fungus):

- Host – oak and sweet chestnut
- Area affected – heartwood
- Type of decay – brown rot

Ganoderma species (Brackets):

- Host – broadleaves
- Area affected – buttresses, main stems
- Type of decay – white rot

Grifola frondose (Hen of the Woods):

- Host – oak and hornbeam
- Area affected – central rootplate or stem
- Type of decay – soft rot in early stages then white rot

Laetiporus sulphureus (Chicken of the Woods):

- Host – broadleaves and conifers
- Area affected - roots, buttresses, main stems and branches
- Type of decay – brown rot

Cerioporus squamosus (Dryads Saddle):

- Host – broadleaves
- Area affected - main stem and branches
- Type of decay - white rot

Sparassis crispa (Cauliflower Fungus):

- Host – conifers
- Area affected – roots and main stem
- Types of decay – brown rot

Phaeolus schweinitzii (Dyer's Mazegill):

- Host – conifers
- Area affected – roots
- Type of decay – brown rot

Perenniporia fraxinea (Giant Ash Bracket):

- Host – ash
- Area affected – buttresses and roots
- Type of decay – white rot

Rigidoporus ulmarius (Giant Elm Bracket):

- Host – broadleaves
- Area affected – buttresses
- Type of decay – brown rot

Pseudoinonotus dryadeus (Eiffel Tower Bracket):

- Host – oak, occasionally beech
- Area affected – central buttresses
- Type of decay – selective delignification

Pholiota squarrosa (Shaggy Scaly cap):

- Host – broadleaves
- Area affected – buttresses and principal roots
- Type of decay – white rot

Pleurotus ostreatus (Oyster Mushroom):

- Host – broadleaves
- Area affected – main stem and principal branches
- White rot
- Other

Topic 4

State **two** notifiable pests and diseases: Notifiable pests and diseases may include:

Phytophthora ramorum (Ramorum disease):

- Host – larch, sweet chestnut
- Spread – water born

Hymenoscyphus fraxineus (Ash Dieback):

- Host – ash
- Spread – wind, movement of infected plants and timber

Thaumetopoea processionea (Oak Processionary Moth):

- Host – oak
- Spread – eggs laid on host trees

Dendroctonus micans (Great Spruce Bark Beetle):

- Host – spruce and pine
- Spread – beetle movements
- Other

Contact regional forestry bodies

Topic 5

Explain the principles of risk rating:

Principles of risk rating may include:

- Probability of failure occurring
- Severity of the damage
- People/property/equipment present target
- Frequency of use
- Overhead electrical network -100% target – constantly present
- Other

Topic 6

Undertake a visual tree assessment:

Visual tree assessment to include:

- Accurate network location established
- Tree species correctly identified
- Reference number attributed
- Generic data collected (height, spread, weighting, age class, tree category)
- Defects correctly identified
- Appropriate risk rating given
- Suitable management recommendation and timeframe for work to commence
- Correct allocation of time/staff/equipment
- Disposal of arisings

Topic 7

Work in a way which maintains health and safety and is consistent with relevant legislation and industry good practice:

- All activities must be completed in a way which protects the environment, operator, and those around them

Module 013 Utility Resilience ETR 132 Arboricultural Surveyor

Candidate name:

Assessor name and Assessor number:

Date:

Start time:

Finish time:

Activity number and description	Grade 1-5
1. Carry out a risk assessment specific to the site and task	
2. Explain the elements considered in an office-based pre-survey, prior to visiting site	
3. Identify and demonstrate knowledge of principal fungal decay organisms	
4. State notifiable pests and diseases	
5. Explain the principles of risk rating	
6. Undertake a visual tree assessment	
7. Work in a way which maintains health and safety and is consistent with relevant legislation and industry good practice	
Total Score	/35
Candidate must achieve a minimum of 3 points in each element and a score of 21 to attain their digital badge	Y/N

Candidate signature	
Assessor signature	

Assessor feedback and recommendations:

Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

City & Guilds Centre Manual

This document provides guidance for organisations wishing to become City & Guilds approved centres, as well as information for approved centres delivering City & Guilds qualifications. It covers the centre and qualification approval process as well as providing guidance on delivery, assessment and quality assurance for approved centres.

It also details the City & Guilds requirements for ongoing centre and qualification approval and provides examples of best practice for centres. Specifically, the document includes sections on:

- the centre and qualification approval process
- assessment, internal quality assurance and examination roles at the centre
- registration and certification of candidates
- non-compliance and malpractice
- complaints and appeals
- equal opportunities
- data protection
- management systems
- maintaining records
- internal quality assurance
- external quality assurance.

Our Quality Assurance Requirements

This document explains the requirements for the delivery, assessment and awarding of our qualifications. All centres working with City & Guilds must adopt and implement these requirements across all their qualification provision. Specifically, this document:

- specifies the quality assurance and control requirements that apply to all centres
- sets out the basis for securing high standards, for all our qualifications and/or assessments
- details the impact on centres of non-compliance

Our Quality Assurance Requirements document encompasses the relevant regulatory requirements of the following documents, which apply to all UK centres working with City & Guilds:

- Ofqual's General Conditions of Recognition

The **centre homepage** section of the City & Guilds website also contains useful information on

- **Walled Garden:** how to register and certificate candidates online
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.

Useful contacts

UK learners

General qualification information

E:
learnersupport@cityandguilds.com

International learners

General qualification information

E: intcg@cityandguilds.com

Centres

Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results

E: information@cityandguilds.com

Single subject qualifications

Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change

E:
singlesubjects@cityandguilds.com

International awards

Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports

E: intops@cityandguilds.com

Walled Garden

Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems

E: walledgarden@cityandguilds.com

Employer

Employer solutions, Mapping, Accreditation, Development Skills, Consultancy

T: +44 (0)121 503 8993
E: business@cityandguilds.com

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As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

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