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**LEVEL 2 CERTIFICATE**  
**IN**  
**ARBORICULTURE**  
**(THEORY)**

## **Customer Service Statement**

ABC strives to provide a prompt, high quality service to enable its centres, in turn, to meet the needs of its customers. A full copy of ABC's Customer Service policy can be seen on the website. Any comments or suggestions are welcome.

## **Enquiries**

Any enquiries relating to the qualification contained within this specification should be directed to:

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**[www.abcawards.co.uk](http://www.abcawards.co.uk)**

Those without Internet access may also wish to contact this office.

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# Background

## ABC, its Portfolio and Qualifications

The ABC Awards is approved by the Qualifications and Curriculum Authority (QCA) to offer qualifications throughout the United Kingdom. QCA is the regulatory body for public examinations and publicly funded qualifications and also has the authority to monitor awarding bodies through quality audits. ABC has offices in Chorley, Nottingham, Reading and Taunton. ABC's current portfolio contains qualifications accredited onto the National Qualifications Framework (NQF) ranging from Entry Level to Level 6. NQF qualifications are eligible for funding under the Learning and Skills Act 2000. More information on funding can be obtained from the Learning and Skills Council (LSC) – **[www.lsc.gov.uk](http://www.lsc.gov.uk)**

ABC specialise in developing Vocationally Related Qualifications (VRQs). These are designed to underpin much of the knowledge for the National Occupational Standards (NOS) and assist in the development of practical skills. In turn, NOS form the basis of National Vocational Qualifications (NVQs). Therefore, although VRQs have links with NVQs, they are not designed to deliver occupational competence and as such do not require delivery and assessment in the workplace. All ABC VRQs are mapped to the NOS for purposes of future accreditation of prior learning (APL) should candidates opt to achieve the NVQ at a later date.

ABC has also developed a small number of NVQs and general qualifications for the NQF, details of which can be found on ABC's website. In addition, ABC offers an accreditation service for Customised Provision, which can usually be funded through "other provision" via the LSC. All Customised Provision courses are quality assured to meet the specified standards through the quality assurance, reporting and review processes which apply to ABC's entire portfolio of qualifications. Further details can be found on the website.

Centres offering ABC qualifications may be colleges, private training providers, community groups, adult education centres, schools, prisons and businesses.

ABC works closely with the relevant Sector Skills Council (SSC)/National Training Organisation (NTO) when developing a qualification for the NQF. A network of SSCs exists to lead the skills and productivity drive in industry recognised by employers. They bring together employers, trade unions and professional bodies working with the government to develop the skills that UK business needs. The Sector Skills Development Agency (SSDA) has been established to underpin the SSC network and promote effective working between sectors – **[www.ssda.org.uk](http://www.ssda.org.uk)**

ABC has the support of Lantra for this particular qualification **[www.lantra.co.uk](http://www.lantra.co.uk)**

ABC VRQs are signposted for Key Skills or Basic Skills wherever possible. Whilst Key Skills are not a part of ABC VRQs, it is recognised that they are transferable skills that play an important role in developing personal effectiveness in adult and working life. Signposting illustrates which Key Skills may be realistically achieved through completion of this qualification; candidates may apply to other Key Skills awarding bodies for certification once they have achieved and been assessed in the relevant units.

ABC VRQs also provide opportunities for developing an understanding of the wider curriculum (spiritual, moral, ethical, social and cultural issues and an awareness of environmental issues, health and safety considerations and European developments). Each component of the wider curriculum is signposted as appropriate.

Finally, ABC qualifications are generally available throughout the UK, unless otherwise stated. Please note however that different regulations exist in Scotland. ABC provides all printed materials in English, however can provide materials in Welsh and/or Irish (Gaeilge) where requested and where appropriate.

Further information, policies, procedures and forms can be obtained from **[www.abcawards.co.uk](http://www.abcawards.co.uk)**

## **Centre Approval**

Centres wishing to offer an ABC qualification require approval as a centre with the ABC in advance of submitting an application for scheme approval. Full details of registration policy and procedures are given in the current Examination Officers Guide, which is issued to the examinations office of all ABC approved centres, and on the website.

## **Scheme Approval**

Centres should apply for approval prior to enrolling candidates in order to guarantee certification. Initially centres are given approval to offer a qualification on the basis of a written submission. Each submission may be forwarded to an external moderator for a paper review. If necessary the Moderator will make an approval visit to verify the accuracy of that submission. At this stage the External Moderator may request further documentation and advise the centre of its next course of action.

## **Health and Safety**

Centres are required to ensure that health and safety regulations are adhered to at all times with regard to the health and well being of all staff and candidates. Centres health and safety policies are required to be sent to the awarding body, together with details of training available for staff and candidates. In the assessment of a centre, the Moderator will give particular attention to health and safety practices/issues.

## **Staffing**

It is expected that staff involved with the delivery of the course will be appropriately qualified to assess candidates against the standards. The ABC approval process requires prospective centres to provide names of the staff involved in delivery and assessment including their qualifications and relevant training/employment experience, plus staff development arrangements. It is the Centre's responsibility to ensure tutors' qualifications are both bona fide and appropriate to the level of the qualification.

## Evaluation and Review

There should be ongoing evaluation by the staff and candidates and this should take place in the following ways:

- Candidate self-evaluation
- Regular review of learning outcomes against agreed criteria through mock examination and test papers, individual tutorials and coursework monitoring.
- Validation by suitably qualified and experienced internal assessor and internal moderator

## Accreditation of Prior Learning (APL)

ABC encourages its centres to recognise the previous achievements of candidates through APL. Prior achievements may have resulted from past or present employment, previous study or voluntary activities. Once the assessor is satisfied that the evidence is authentic and current, s/he should assess the evidence against the requirements of the ABC unit(s) in the normal manner. Any queries should be referred to the Internal Moderator.

## Unit Design

Each unit contains:

**Learning Outcomes:** defines what the candidate needs to do.

**Knowledge Requirements:** defines what the candidate needs to know. The **minimum** requirements are outlined.

**Assessment Guidance:** explains how the assessment may be carried out, depth of coverage expected, what *should* be included and what *could* be included.

## Diversity

ABC will endeavour to ensure that through its policies, procedures and actions all candidates entered for assessment are treated fairly and on an equal basis. All centres will be expected to have a clear commitment in support of this objective.

Access to ABC qualifications is open to all candidates irrespective of gender, ethnic origin, creed, employment status, nationality, sexual orientation, marital status or special assessment arrangements. Centres must ensure that no candidate is subjected to unfair discrimination on any of these grounds in relation to access to assessment and to the fairness of the assessment.

A copy of ABC's full policy can be seen on the website.

# Level 2 Certificate in Arboriculture

**QCA Accreditation No:** 100/5066/8

**Accreditation Start Date:** 01/09/2005

**Accreditation End Date:** 31/08/2009

**Certification End Date:** 31/08/2011

## Introduction

The Certificate in Arboriculture (Theory) is designed for those people working in arboriculture, in both the public and private sectors, to complement their training and experience, and to provide evidence of their knowledge of arboriculture. It is a useful first step for the person who may go on to take the Professional Diploma in Arboriculture of the Royal Forestry Society (RFS), and is a valuable stand-alone award.

Once candidates have passed the ABC Certificate in Arboriculture (Theory), aspiring arborists should consider the completion of appropriate competence tests to validate their practical ability. **Many of the tests are legally required for operators.**

The following practical tests, validated by the National Proficiency Tests Council (NPTC), are required for application for **the RFS Certificate in Arboriculture**

- |                |                  |  |
|----------------|------------------|--|
| (a) Compulsory | AO1              | Planting                                   |
|                | CS30             | Maintain Chainsaw                          |
|                | CS31             | Fell Small Trees                           |
|                | AO6              | Brushwood (Chipper)                        |
| (b) Optionals  | AO2              | Individual Protection                      |
|                | AO3              | Bracing & Supporting                       |
|                | AO5              | Tractor Driving (MO1)                      |
|                | AO7              | Stump Grinder                              |
|                | AO11             | Specialist Pruning                         |
|                | AO12             | Brushwood Cutters or Clearing Saws         |
|                | AO15             | Weeding & Cleaning                         |
|                | CS34             | Clear Individual Windblown Trees           |
|                | CS38             | Climb Trees & Perform Aerial Tree Rescue   |
|                | CS39             | Operate the Chainsaw from a Rope & Harness |
|                | CS40             | Carry Out Pruning Operations               |
|                | CS41             | Carry Out Dismantling Operations           |
| PA6a           | Knapsack Sprayer |  |

Three optional tests must be passed, including at least one from the AO series and one from the CS series. Candidates should ensure that the tests selected are those currently required.

Once candidates have successfully completed the ABC Theory examination they will be awarded a Level Two Certificate in Arboriculture. Once the required number of NPTC tests have been passed, (the NPTC tests are considered to be the benchmark for quality in hands-on arboriculture at craft level) a covering letter with photocopies of the ABC and NPTC certificates must be submitted to the RFS at 102 High Street, Tring, Herts, HP23 4AF for an **RFS Level Two Certificate in Arboriculture award**.

## **ABC's Partners for this Qualification**

**Royal Forestry Society (RFS):** 102 High Street, Tring, Hertfordshire HP23 4AF. Email: rfshq@rfs.org.uk.org.uk. Tel: 01442 822028 Fax: 01442 890395. Website: www.rfs.org.uk

The RFS is Britain's largest forestry association. It promotes the conservation and expansion of tree resources through good forest stewardship. The RFS conducts examinations for the Professional Certificate in Arboriculture and in the past, this Certificate in Arboriculture.

## **Aims**

The qualification aims are:

1. To provide candidates with the opportunity to acquire the essential skills, knowledge and understanding required for employment in arboriculture and related industries, and to enable them to progress to advanced study.
2. To provide a stimulating and supportive learning environment for candidates to develop their potential contribution to arboriculture and associated industries.
3. To develop underpinning knowledge within the subject area, by promoting and encouraging the development of new techniques and learning activities.

## **Outcomes**

On completion of the course candidates will:

1. Have developed an awareness of the current issues facing arboriculture and related industries, and have an appreciation of their wider social, cultural and economic significance.
2. Have acquired knowledge and understanding to move confidently from course to career.
3. Have developed personal transferable skills, which will enable them to function effectively in either employment or further study.
4. Be able to make informed choices about vocational and academic options open to them.



5. Understand current safety legislation and practice, and the need to work accordingly.
6. Be able to adapt to change and new technologies and demonstrate a broad understanding of relevant technology.
7. Develop communication and problem solving skills through the opportunity to seek information and evaluate aspects of arboriculture in an informed manner.
8. Apply understanding of the theoretical principles that underpin arboriculture to operations in the workplace either through work experience or employment.

## **Target Group**

This award is designed for candidates who consider it advantageous if not essential for employment, or for individuals working in arboriculture, in both the public and private sectors, who have identified it necessary to complement their training and experience and to provide evidence of their competence.

## **Entry Requirements**

The selection of candidates is within the discretion of the centre. Centres who offer, or who seek to offer, the Certificate in Arboriculture (Theory) award are responsible for ensuring equality of opportunity and for recruiting with integrity. Candidates should be selected on the basis of their ability to contribute to and successfully complete the qualification.

## **External Candidates**

External candidates wishing to sit the written examination must apply to the Awarding Body on a completed form and with the appropriate examination fee by the entry dates to be determined by ABC.

Failure to return the entry form by the relevant date will result in a late entry fee being charged.

## **Progression Opportunities**

Centres must implement a guidance procedure and an equal opportunities policy. Centres must be satisfied that all candidates accepted will be capable of achieving the outcomes of the course at the stated level.

The completion of the award provides access to continued Further Education, enhanced employability and/or an opportunity for employed candidates to up-date existing skills.

This qualification is linked to the National Standards in Treework. It provides the underpinning knowledge for selected elements at Level 2 and hence successful candidates have a number of progression routes open to them.

For example:

- Technician's Certificate
- National Diploma in Arboriculture
- NVQ 3 Horticulture/Arboriculture
- GNVQ Advanced
- RFS Professional Diploma in Arboriculture.

## Qualification Structure

The ABC Level 2 Certificate in Arboriculture is made up of the following six units:

1. Describing soil formation, nutrient requirements, associated problems and treatment.(L/103/0936)\*
2. Understanding tree biology, physiology, causes and signs of ill health and treatments.(R/103/0937)\*
3. The selection, supply, planting and aftercare of plants to include nomenclature.(Y/103/0938)
4. Tree surgery operations including health and safety, equipment maintenance.(D/103/0939)\*
5. Carrying out tree inspection/surveys and understanding statute and common law.(R/103/0940)\*
6. Basic understanding of woodlands and forestry to include ecology.(Y/103/0941)\*

\*Numbers in brackets denote QCA Accreditation Numbers

The qualification has been allocated 180 guided learning hours for completion.

The LSC definition of 'guided learning hours' is "all times when a member of staff is present to give specific guidance towards the learning aim being studied on a programme. This includes lectures, tutorials, and supervised study in, for example, open learning centres and learning workshops. It also includes time spent by staff assessing learners' achievements. It does not include time spent by staff in the day-to-day marking of assignments or homework where the learner is not present. It does not include hours where supervision or assistance is of a general nature and is not specific to the study of the learners"

Centres should bear this in mind when planning qualification delivery.

## Qualification Delivery

The organisation of the scheme is at the discretion of the Centre. They should adopt a delivery approach that supports both the vocational nature of the Level 2 Arboriculture qualification and the particular group of candidates. Units in the Level 2 Arboriculture Certificate contain theoretical knowledge requirements only. Delivery of the practical learning intended to guide candidates towards NPTC test is at the discretion of the centre. The aims, aspirations and experience of the candidates should also be considered.

Centres are encouraged to choose the most suitable curriculum model for their candidates. Whilst the sequential delivery of topics is a possibility and may provide the most straightforward way of determining completion of individual topics, it is inevitable that some degree of integration of topics will occur.

Throughout the course a simulated working atmosphere/environment should be adopted. In addition, candidates should be provided with real work experiences wherever possible and visits to places of interest and co-operation with local tree surgery establishments are strongly recommended.

Delivery may be enhanced by:

- Liaising with employers with reference to delivery, work experience and/or resources
- Visits to appropriate places of interest
- The provision of information and guidance to candidates on the availability and type of employment the qualification may lead to and on the progression routes available for further education and training

The unit structure of the qualification will enable candidates to achieve accreditation for units successfully completed, if for some reason they are unable, or do not wish to achieve a full certificate.

It is hoped that opportunities provided by the specification will be fully used to introduce related and general/key skills studies.

It should be noted that the units are **not** expected to occupy equal amounts of time. It is expected that opportunities provided by the syllabus will be fully used to introduce related and general/key skills studies.

Centres must ensure that adequate arrangements are in place for supporting candidates. This could be either through separate tutorial/assessment sessions or through the use of time within structured study sessions.

Centres are recommended to provide information and guidance to their candidates on the availability and type of employment the programme may lead to and on the progression routes available for further education and training in the arboricultural field.

## **Resources**

Access to site(s) with trees including urban, rural and woodland situations.

## **Assessment**

### **External assessment**

There are three papers which cover the whole syllabus. These will be held on the same day, on two occasions during the year to be determined by ABC, at various centres throughout England and Wales. Occasionally, arrangements can be made for candidates wishing to sit these papers outside the UK.

Paper 1 will cover units 1, 3 and 6 and will last for 2 hours  
Soils, Nutrients, Water, Problems and Treatment.  
Plant Selection, Supply, Planting and Aftercare.  
Forestry, Community Woodlands and Ecology.

Paper 2 will cover units 2 and 5 and will last for 1½ hours  
Nomenclature, Biology, Physiology, Ill health and Treatment.  
Tree Inspections/Surveys, Statute and Common Law

Paper 3 will cover unit 4 and will last for 1½ hours  
Tree Surgery, Health and Safety and Equipment Maintenance

**There is no Internal Assessment**

## **Certification**

Awarding is at Level 2.

Candidates must pass each of the examination papers for a certificate to be awarded.

A certificate will be issued to successful candidates. Grades of achievement will be recorded on the certificate according to the following scale:

Pass	50-59%
Merit	60-74%
Distinction	75-100%

Learners will be certificated for all units and qualifications they achieve.

# Qualification Content

## Level 2 Certificate in Arboriculture

### **Unit 1 Describing soil formation, nutrient requirement, associated problems and treatment**

#### **Unit summary**

This unit covers soil formation, soil structure and physical characteristics, water in the soil, nutrients and their availability, organisms found in the soil, conducting a soil survey, conditions required for plant growth, causes of poor quality soil and improving conditions for plant growth.

#### **Learning Outcomes**

The candidate will be expected to:

1. Describe what soils are made from, how rocks break up and the role of organic matter in the process of soil formation.
2. Describe how soil is moved to new geographical locations and how material is moved within the soil to form different horizons.
3. Describe the properties of the main soil particles and how soil aggregates are formed, state what is meant by the terms soil structure and soil texture.
4. Describe how water acts in the soil, what available and unavailable water is and how pore size affects the water retention.
5. Demonstrate an understanding what soil nutrients are and how their availability is often affected by the soil type. Be able to explain soil acidity and how it is measured and the problems associated with acid soils.
6. Identify what types of organism are found in the soil and how they are involved in recycling nutrients.
7. Carry out a soil survey collecting sufficient data to be able to classify the soil type.
8. Identify the optimum soil conditions required for plant growth, the causes of poor quality soils and methods of improving poor quality soils.
9. Identify the role played in plant growth by the principle major and minor nutrients, identify signs of nutrient deficiency and state methods of applying fertilizes to trees and shrubs.

**Knowledge Requirements:**

The candidate should understand:

- Igneous, sedimentary and metamorphic rock formation
- How physical and chemical weathering takes place.
- The role of organic matter and formation of mul and mor humus and the variable soil factors and what affect climate, organisms, topography parent materials and time have on soil formation.
- What podzol, gley, brown earth, rendzina, peat, sedimentary and alluvial soils are.
- The properties of the main particles of soil, stones, gravel, coarse and fine sand, silt and clay, the terms soil structure and texture and why there are an important property in determining the range of pore size in the soil.
- How pore size affects water retention, what forces are acting upon the soil water and the terms, wilting point, field capacity, soil moisture deficit, saturation point and the water table.
- What determines the availability of major and minor nutrients, why colloids are important and what the pH scale measures, the problems of an acid soil and how this may be alleviated.
- The role that soil organisms and bacteria, fungi, algae and animals play in soil ecology and nutrient recycling especially the nitrogen cycle.
- How soils are classified and methods of collecting data.
- The optimum conditions for plant growth and the effects on plant growth of poor drainage, lack of soil oxygen, low nutrient levels, toxin accumulation, weed competition and too high or too low a pH
- Techniques and advantages of liming, fertilisation, drainage, changing pH levels, applying organic matter, de-compaction, cultivation and aeration.

**Assessment Guidance:**

External Assessment: Written examination of 2 hour duration. The examination will cover Units 1, 3 and 6.

## **Unit 2 – Understanding tree biology, physiology, causes and signs of ill health and treatments.**

### **Unit summary**

This unit covers the classification and naming system of trees, shrubs and climbers, their internal and external structure, physiological processes, bio-mechanical structure, defence, tree response, causes of ill health and treatment/preventative measures.

### **Learning Outcomes**

The candidate will be expected to:

1. State the principal divisions of the plant classification system and recognise a wide range of woody plants from a set level 2 list. (Appendix 5)
2. Illustrate and describe the functions of the external and internal structure of ring, diffuse porous and coniferous woody plants.
3. Describe the main physiological processes that woody plants carry out.
4. Describe the main factors which influence growth and how woody plants adapt depending upon their environment.
5. Describe root growth form and shape, depth, spread, distribution and factors affecting distribution.
6. Explain what is meant by tree bio-mechanics and how the axiom of uniform stress, the undamaged tree as a self optimised structure and the principle of the minimum lever arm influence the shape of woody structures.
7. Explain the defence mechanisms used by woody plants to prevent or resist destruction or the effects of ill health.
8. Describe causes of ill health in trees and shrubs when caused by both abiotic and biotic factors with particular reference to the four main colonisation strategies employed by decay fungi.
9. Identify and describe (from the set list Appendix 6) common and important causes of ill health in trees and shrubs, indicate their significance and prescribe preventative or control measures.

**Knowledge Requirements:**

The candidate should understand:

- Kingdom, division, class, family, genus, species, variety, cultivar, common name, inter specific, inter generic and graft hybrid (chimera).
- Functions of different cells and tissues found in woody structures and how broadleaved trees differ from coniferous trees in both internal and external structures ring and diffuse porous structures.
- Photosynthesis, respiration, transpiration, transportation, defence, storage, reproduction, anchorage, cell division and seed dispersal.
- Environmental factors affecting growth, sunlight, temperature, pollution, water availability, oxygen and carbon dioxide levels.
- The growth of woody plants from germination through secondary thickening, production of annual rings, buds, leaves, flowers, roots, growth modifications abscission to dormancy to include what is meant by phenology.
- Functions of roots – buttress, lateral, fibrous, droppers/sinkers, how trees are anchored in the soil and the causes of a loss of anchorage.
- The principles attributed to the tree as an undamaged self-optimised structure, axiom of uniform stress and the minimum lever arm dictate the shape (body language) of trees.
- The mechanisms of defence – physical measures spines, thorns, prickles, bark, leaf adaptations, hairs – chemical measures, phenolics, tannins, resins, gums terpenes and cyanide production. Compartmentalisation of decay (CODIT), callus and wound wood growth.
- Signs and symptoms (from set list Appendix 6), life cycle/infection process/colonisation strategy, (heartwood, sapwood intact and exposed, active pathogenesis) remedial or preventative measures of common/ important causes of ill health.

**Assessment Guidance:**

External Assessment: Written examination of 1½ hour duration. The examination will cover Units 2 and 5.



**Unit 3 The selection, supply, planting and aftercare of plants to include nomenclature.****Unit summary**

This unit covers the values, selection, supply, planting and aftercare of woody plants used in urban amenity planting sites and in community woodlands.

**Learning Outcomes**

The candidate will be expected to:

1. List the values of woody plants/ planting in terms of environmental, amenity, landscape, ecological and social values.
2. Select tree and shrub species for planting in a wide range of conditions and in various urban and woodland settings.
3. State the category of size and specification of woody vegetation commonly available from nursery suppliers from seedling to extra-heavy standard.
4. Describe the plant handling process from lifting in the nursery through to storage at the planting site.
5. Describe planting methods appropriate to size of planting stock and site conditions for a range of tree and shrub material.
6. Describe the pre-planting site requirements for a range of sites, conditions and stock size.
7. Identify the appropriate protection and support system requirements for a range of stock sizes and site conditions.
8. State the aftercare requirements of newly planted stock until successful establishment takes place.

**Knowledge Requirements:**

The candidate should understand:

- The value that woody vegetation especially large trees provide environmentally, amenity, landscape, ecologically and socially when grown in the urban environment and in community woodlands.
- The values that individual features of trees and shrubs provide such as – size, shape, form, foliage, bark, flowers, fruits and other interest gives to specimen trees, groups or woodlands in a range of urban and woodland situations.
- The requirements of trees or shrubs chosen for a particular situation – woodland, woodland edge, hedge, screen, windbreak, small garden, large state/park, street, acid soils and costal exposed.
- Definitions and category of seedling, transplant, whip, multi-stemmed, feathered, standard and extra heavy standard.
- What is meant by bare root, cell grown, root balled, containerised and root controlled grown stock.
- The need and requirements for careful lifting, bundling, labelling, packaging, transportation and storage of stock from lifting to arrival at a planting site.
- The site pre-planting requirements for planting the above range of stock in various site conditions to include weedy, compacted, wet, minimum soil depth clay and sandy. The requirements and techniques of planting seedlings – extra heavy standards and from bare root – root controlled stock.

- The reasons why newly planted stock fails without after care and the requirements of an after care programme may include watering, mulching, formative pruning, tie adjustment, weed control, pest and disease control over a three year period.

**Assessment Guidance:**

External Assessment: Written examination of 2 hour duration. The examination will cover Units 1, 3 and 6.

## **Unit 4 Tree surgery operations including health, safety and equipment maintenance**

### **Unit Summary**

This unit covers tree surgery operations, equipment use and maintenance using industry best practice and adherence to Health and Safety legislation with implications for arboricultural operations.

### **Learning Outcomes**

The candidate will be expected to:

1. Describe tree surgery operations covered by BS 3998 Recommendations for Tree Work in accordance with best practice and in compliance with the Acts and Regulations listed below.
2. Describe daily and routine maintenance and service checks on the range of machinery that would be used in connection with the above operations in accordance with best practice and manufacturers instructions.
3. Describe how to maintain personal protective, lifting and tree surgery equipment in accordance with best practice and in compliance with the Acts and Regulations listed below.

### **Knowledge Requirements:**

The candidate should understand:

- Employer and employee responsibilities under the Health and Safety at Work Act.
- The procedures of risk assessment carried out under the Management of Health and Safety Regulations.
- The duties of the employer under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations.
- The duties required of the employer and employee under the Lifting Operations and Lifting Equipment Regulations, Provision and Use of Work Equipment Regulations, Control of Substances Hazardous to Health Regulations, First Aid Regulations, Personal Protective Equipment Regulations, Manual Handling Regulations and Control of Pesticide Regulations.
- The requirements for setting out road work signs as required by the Code of Practice for setting out signs at New Roads and Street Works for tree works carried out near the highway or in a public place.
- Best Practice methods of carrying out tree work operations as identified by the Arboricultural and Forestry Advisory Group, the Health and Safety Executive leaflets, CS units and INDG 317 Chainsaws at Work advice booklet.

### **Assessment Guidance:**

External Assessment: Written examination of 1½ hour duration to cover Unit 4 only.

## **Unit 5 Carrying out tree inspections/Surveys and understanding statute and common law**

### **Unit Summary**

This unit covers development of a systematic and logical method of inspecting trees for obvious signs and symptoms of ill health and the aspects of common and statute law appropriate to carrying out tree surgery works.

### **Learning Outcomes**

The candidate will be expected to:

1. Undertake a single tree inspection and a multiple tree survey in a systematic diagnostic manner identifying obvious signs of ill health and mechanical defects.
2. Draw up a template for recording data in the field and record information in a coherent manner.
3. Make tree work recommendations in writing to include recommending a more detailed inspection based on their findings in the field when a more competent Arborist is required.
4. State and have an understanding of the statute legislation which affords trees protection and the procedures to apply for consent or give notification of intended works.
5. Describe how aspects of common law have set court precedents in relation to an owner's duty of care and the pruning of trees by owners and contractors.

### **Knowledge Requirements:**

The candidate should understand:

- The biological and mechanical observational process of inspecting/surveying trees.
- Simple methods of collecting data in the field on paper using a check list or as a tabulated format.
- Common reasons for the need to inspect/survey trees.
- The need for tree preservation orders and what is required for tree preservation orders, conservation area and felling licence applications/notification for works and the penalties for non-compliance.
- The duty of care required to be shown by a tree owner to visitors.
- How dangerous trees, overhanging branches, trespassing roots, poisonous and thorny plants are treated under common law.

### **Assessment Guidance:**

External Assessment: Written examination 1½ hour duration covering Units 2 and 5.

## **Unit 6 Basic understanding of woodlands and forestry to include ecology**

### **Unit Summary**

This unit covers the history of woodland/forestry cover in Great Britain from 1600 A.D. up to the development of community forests identifying types of woodland/forestry system and management principles. The unit also covers an introduction to ecology and woodland ecosystems.

### **Learning Outcomes**

The candidate will be expected to:

1. Describe how woodland/forestry cover has changed from 1600 A.D. to the present day.
2. Identify woodland terms and how a woodland develops.
3. Describe and outline the benefits and disadvantages of common silvicultural systems of tree management.
4. Give a definition for the main types of woodland and state why management is required.
5. Outline the main aims and objectives of community woodlands as outlined by government and national policy.
6. Explain how a woodland ecosystem functions and be able to describe a simple woodland food chain or web.

### **Knowledge Requirements:**

The candidate should understand:

- The history of woodland cover from 1600 A.D. and the changes that have occurred up to and including designation of community woodlands and the National Forest.
- Silviculture, vertical and horizontal woodland structure, high forest, plantation, coppice, succession, climax vegetation, natural regeneration, weeding, cleaning, thicket stage, thinning and clear felling.
- The silvicultural management systems of clear fell and continuous cover to include selection (single tree or group) and shelterwood (uniform, irregular and group)
- Ancient woodland, ancient semi natural woodland, semi natural woodland, wood pasture, coppice and coppice with standards and the need for management.
- The objectives of establishing community woodlands.
- Food chain/web, producers, primary, secondary and tertiary consumers, decomposers, competition and selection, ecotone, habitat, niche, community stability and catastrophic change.

### **Assessment Guidance:**

External Assessment: Written examination of 2 hour duration covering Units 1, 3 and 6.

# Appendices

## 1 National Occupational Standards Mapping

For information purposes, this mapping shows the links to the national standards. Candidates completing this qualification may be able to use some of their evidence for APL against the associated NVQ; however this would be at the discretion of the NVQ Awarding Body.

## 2 Key Skills Signposting

For information purposes, this signposting shows the links to the Key Skills. Candidates completing this qualification may be able to use some of their evidence for APL against the associated Key Skill; however this would be at the discretion of the Key Skill Awarding Body.

## 3 Wider Curriculum Signposting

For information purposes, this signposting shows how the ABC Level 2 Certificate in Arboriculture provides opportunities for the candidate to develop an understanding of the wider curriculum (spiritual, moral, ethical, social and cultural issues and an awareness of environmental issues, health and safety considerations and European developments).

## 4 Useful Information

This section lists a number of helpful books and websites

## 5. Woody Vegetation Learning List

A guide to species that Level 2 candidates should be able to recognise and incorporate into examination answers.

## 6 Pest, Disease and Disorder Learning List

A list of the above which candidates should learn about on this programme.

## 7 Glossary and Acronyms

An explanation of some of the terms, phrases and abbreviations commonly used throughout ABC documentation

## 1. National Occupational Standards Mapping

The ABC Level 2 Certificate in Arboriculture is mapped to the following national standards:

Lantra Treework Standards (March 2002)

Lantra Production Horticulture Standards (February 2002) =PH

ABC Units		National Occupational Standards
Unit 1	Describing soil formation, nutrient requirement, associated problems and treatment	No direct mapping
Unit 2	Understanding tree biology, physiology, causes and signs of ill health and treatments.	PH10.1, 10.2
Unit 3	The selection, supply, planting and aftercare of plants to include nomenclature	T10.1, T10.2 T11.1
Unit 4	Tree surgery operations including health, safety and equipment maintenance	A1, A2
Unit 5	Carrying out tree inspections/Surveys and understanding statute and common law	T7.1
Unit 6	Basic understanding of woodlands and forestry to include ecology	No direct mapping

## 2. Key Skills Signposting

The ABC Level 2 Certificate in Arboriculture is mapped to the following Key Skills:

Level 2 Communication

Level 2 Application of Number

Level 2 Improving Own Learning and Performance

Level 2 Problem Solving

Communication Level 2		
Key Skill	ABC Unit	Signposting
C2.1a Contribute to a discussion about a straightforward subject	All Units	No mapping
C2.1b Give a short talk about a straightforward subject, using an image	All Units	Evidence could be generated making a presentation on a topic linked to the unit
C2.2 Read and summarise information from <b>two</b> extended documents about a straightforward subject. One of the documents should include at least <b>one</b> image	All Units	Evidence could be generated when researching to produce work on a topic linked to the unit.
C2.3 Write <b>two</b> different types of documents about straightforward subjects. One piece of writing should be an extended document and include at least <b>one</b> image	All Units	Evidence could be generated when producing written work on a topic linked to the unit.

Application of Number Level 2		
Key Skill	ABC Unit	Signposting
N2.1 Interpret information from <b>two</b> different sources, including material containing a graph	Unit 1	Evidence could be generated when conducting a soil survey
N2.2 Carry out calculations to do with: a amounts and sizes b scales and proportion c handling statistics d using formulae	Unit 1	Evidence could be generated when conducting a soil survey
N2.3 Interpret the results of your calculations and present your findings. You must use at least <b>one</b> graph, <b>one</b> chart and <b>one</b> diagram	Unit 1	Evidence could be generated when conducting a soil survey



<b>Problem Solving Level 2</b>		
<b>Key Skill</b>	<b>ABC Unit</b>	<b>Signposting</b>
PS2.1 Identify a problem and come up with <b>two</b> options for solving it	Units 1 and 5	Evidence could be generated when planning a soil survey/tree inspection
PS2.2 Plan and try out at least <b>one</b> option for solving the problem, obtaining support and making changes to your plan when needed	Units 1 and 5	Evidence could be generated when planning a soil survey/tree inspection
PS2.3 Check if the problem has been solved by applying given methods, describe results, and explain your approach to problem solving	Units 1 and 5	Evidence could be generated when carrying out a soil survey/tree inspection

<b>Improving Own Learning and Performance</b>		
<b>Key Skill</b>	<b>ABC Unit</b>	<b>Signposting</b>
LP2.1 Help set short term targets with an appropriate person and plan how these will be met	All Units	Evidence could be generated when planning work with a tutor
LP2.2 Take responsibility for some decisions about your learning, using your plan and support from others to help meet targets. Improve your performance by: studying a straight forward subject; learning through a straightforward practical activity	All Units	Evidence could be generated by carrying out the plans
LP2.3 Review progress with an appropriate person and provide evidence of your achievements, including how you have used learning from one task to meet the demands of a new task	All Units	Evidence could be generated when carrying out a review with a tutor

### 3. Wider Curriculum Signposting

With regard to the enhancement of spiritual understanding, two definitions within the Oxford English dictionary state *'of the human spirit or soul, not physical or worldly'* and *'of the Church or religion'*. This qualification does not contribute to an understanding of spiritual issues.

The word 'Moral' can be defined as *'of or concerned with the goodness and badness of human character or with the principles of what is right and wrong in conduct'*. In the delivery of the qualification a tutor must undertake to instil in a student the difference between good and bad practice, most significantly in those practices relating directly to their employment. So in the context of the latter definition, an understanding of moral issues may be gained from this award.

A definition of 'Ethical' is given as *'morally correct, honourable'*, and can be attributed to the Arboriculturalist, as nearly every activity that they will undertake as part of their working life will require their compliance with given procedures and processes. To integrate into a working environment, an individual will always be required to conform to accepted principles of conduct, professionally as well as personally, and the lessons learnt during this programme of study should stand them in good stead.

A definition of 'Social' is *'of the mutual relations of people or classes living in an organised community'*. There may be minimal understanding of social issues gained from working together as a team during delivery of the qualification.

'Cultural' can be defined as *'the customs and civilisation of a particular people or group'*. Cultural awareness is present in this qualification, European developments in standardisation of pruning techniques and co-operation between European countries in advancement of arboriculture takes place.

Health and Safety issues run throughout the entire award and its importance should be emphasised at every opportunity. The importance of correct use of equipment, manual handling, safety of self and others, PPE, etc should become second nature to every student.

Environmental awareness runs throughout the award, in terms of safe disposal of waste products and recycling of products arising from the process of tree surgery operations. Discussions on the make-up of materials, resource availability and the impact on the environment of materials used may also further contribute to an understanding of environmental awareness.

## 4. Useful Information

### 4.1 Reading List

1. **A Field Guide to the Trees of Britain & Northern Europe** *A. Mitchell (Collins)*
2. **Mushrooms**  
*R. Philips (Pan)*
3. **Shrubs**  
*R. Philips & M. Rix (Pan)*
4. **Trees in Britain**  
*R. Philips (Pan)*
5. **The Hillier Book of Tree Planting & Management**  
*K.D. Rushforth (David & Charles)*
6. **RHS Encyclopaedia of Practical Gardening - Pruning, Plant Propagation**  
*RHS (Mitchell Beazley)*
7. **Modern Arboriculture**  
*A.L. Shigo (Shigo & Trees Associates)*
8. **Urban Forestry Practice - FC Handbook No.5**  
*Ed. B. Hibberd (HMSO)*
9. **Diagnosis of Ill-Health in Trees**  
*R.G. Strouts & T.G. Winter (HMSO)*
10. **The Body Language of Trees: Research for Amenity Trees 4**  
Mattheck, C & Breloer, H. 1994
11. **Creating New Native Woodlands: FC Bulletin 112**  
Rodwell, J & Patterson, G. 1994
12. **The Encyclopaedia of Fungi Of Britain and Europe**  
Jordan, M. 1995
13. **Principles of Tree Hazard Assessment and Management: Research for Amenity Trees 7**, Lonsdale, D. 1999
14. **Veteran Trees: A Guide to Good Management**  
Read, H. 2000
15. **Plant Handling Code**, Horticulture Trades Association 1990
16. **AFAG/HSE Safety Guides.**
17. **Aerial Rescue, Guidance Notes**,  
Arb Assoc / AFAG. 1997
18. **Safety at Street Works and Road Works A Code of Practise**  
2001
19. **Training and Standards of Competence for Users of Chainsaws, Guidance Note INDG 317**
20. **Tree Preservation Orders A Guide to the Law and Good Practice**
21. **Tree Mechanics explained by Pauli the Bear.**  
Claus Mattheck. 2002.
22. **Stupsi explains the tree.**  
Claus Mattheck. 1997.
23. **Essential Soil Science.**  
MR Ashman and G Puri. 2002
24. **Guidelines for the Planning, Installations and Maintenance of Utility Services in Proximity to Trees** NJUG 10.
25. **Trees and their Natural History**  
Peter Thomas. 2001.
26. **Hazards from Trees: FC Practice Guide 13**  
Lonsdale, D. 2000
27. **The Hiller Manual of Trees and Shrubs: Pocket Edition**  
David & Charles 1998

28. **Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines (3<sup>rd</sup> Ed.)**  
Harris, R W; Clark, J R & Matheny, N P. 1999
29. **Trees of Britain, Europe and North America**  
Philips, R. 1978
30. BS 3998 - 2005           **Tree Work**
31. BS3936 Part 1 - 1992   **Specification for Trees & Shrubs**  
          Part 2 – 1992   **Forest Trees**
32. BS4043 - 1989           **Transplanting Root Balled Trees**
33. BS5837 - 2005           **Guide for Trees in Relation to Construction**
34. **Silvicultural Systems** Matthews, J D. 1991

#### **Leaflets**

35. AAIS Information notes
36. Arboricultural Research Information Notes
37. Tree Damage Alerts

Many of the above books can be obtained through public libraries or borrowed by RFS members from its library on postal loan.

#### **4.2 Web Site Addresses www.**

ABC Awards – [abcawards.co.uk](http://abcawards.co.uk)  
Ancient Tree Forum – [woodlandtrust.org.uk/ancient-tree-forum](http://woodlandtrust.org.uk/ancient-tree-forum)  
Arboricultural Association – [trees.org.uk](http://trees.org.uk)  
Arboricultural Information Exchange - [aie.org.uk](http://aie.org.uk)  
Bat Conservation Trust – [bats.org.uk](http://bats.org.uk)  
DEFRA – [defra.gov.uk](http://defra.gov.uk)  
English Nature – [english-nature.org.uk](http://english-nature.org.uk)  
Forestry Commission - [forestry.gov.uk](http://forestry.gov.uk)  
Forest and Tree Pathology – [forestpathology.org](http://forestpathology.org)  
International society of Arboriculture – [isa-arbor.com](http://isa-arbor.com)  
LANTRA – [lantra.co.uk](http://lantra.co.uk)  
National Testing Proficiency Council – [nptc.org.uk](http://nptc.org.uk)  
National Urban Forestry Unit – [nufu.org.uk](http://nufu.org.uk)  
Royal Forestry Society – [rfs.org.uk](http://rfs.org.uk)  
Tree Advice Trust – [treadviceservice.org.uk](http://treadviceservice.org.uk)  
Tree Council – [treecouncil.org.uk](http://treecouncil.org.uk)  
Tree Link – [treelink.org](http://treelink.org)  
Treesource – [treesource.co.uk](http://treesource.co.uk)  
Summerfield Books – [summerfield-books.com](http://summerfield-books.com)

## 5. Woody Vegetation Learning List

Tutors and Candidates should use the plant list as a guide to species that Level 2 candidates should be able to recognise and incorporate into examination answers. The list also forms a prelude to the level 3 list.

Genus	Species	Culture
Acer	pseudoplatanus platanoides	
Aesculus	hippocastanum	
Alnus	glutinosa	
Betula	pendula	
Carpinus	betulus	
Castanea	sativa	
Corylus	avellana	
Crataegus	monogyna	
Fagus	sylvatica	
Fraxinus	excelsior	
Ilex	x altaclarensis aquifolium	
Juglans	regia	
Liriodendron	tulipifera	
Liquidambar	styraciflua	
Malus		'John Downie'
Plantanus	x hispanica	
Populus	alba nigra	
Prunus	avium padus subhirtella	
Pyrus	salicifolia	
Quercus	petraea robur cerris ilex	

Salix	caprea fragilis	
Sorbus	aria aucuparia intermedia	
Tilia	cordata x europaea	
Ulmus	procera	
Abies	grandis	
Cedrus	atlantica	
Chamaecyparis	lawsoniana	
X Cuprocyparis	leylandii	
Juniperus	communis	
Larix	decidua	
Picea	abies	
Pinus	nigra sylvestris	
Sequoiadendron	giganteum	
Taxus	baccata	
Thuja	plicata	
Berberis	thunbergii	
Buddleia	dauidii	
Cornus	alba	
Cotinus	coggygria	
Cotoneaster	horizontalis	
Elaeagnus	x ebbingei pungens	'Maculata'
Escallonia	sp	
Forsythia	x intermedia	
Mahonia	aquifolium	
Prunus	laurocerasus	

Pyracantha	atalantioides
Ribes	sanguineum
Rhododendron	ponticum
Sambucus	nigra
Ulex	x europaeus
Viburnum	x bodnantense tinus
Hedera	helix
Lonicera	periclymenum

## 6. Pest, Disease and Disorder Learning List

### DISORDERS

1. Nutrient deficiencies – Nitrogen, Potassium, Phosphorous, Manganese and Iron.
2. Mechanical injury – mowing equipment
3. Road salt
4. Competition - weeds
5. Waterlogging
6. Drought
7. Compaction
8. Too high or too low pH

### PESTS (animals/insects)

9. *Pulvinaria regalis* horse chestnut scale
10. Galls - *Andricus quercuscalicis* – Knopper gall, *Neuroterus quercusbaccarum* – Common spangle gall, *Andricus koleri* – Marble gall.
11. *Adelges cooleyi* – Wooley Aphid
12. Aphids Cypress and Lime
13. Deer
14. Rabbits and hares
15. Grey Squirrels

### GENERAL (no known cause)

16. Bud proliferation of red horse chestnut

### DISEASES

17. *Apiognomonia veneta* (*Gnomonia platani*) – Anthracnose of London Plane
18. *Armillaria mellea* – Honey fungus
19. *Daldinia concentrica* – King Alfred's Cakes
20. *Scolytus* species/*Ophiostoma novo-ulmi* Dutch Elm Disease
21. *Fistulina hepatica* – Beef Steak fungus
22. *Ganoderma adspersum/applanatum*
23. *Guignardia aesculi* - Horse Chestnut leaf Blotch
24. *Inonotus hispidus*
25. *Laetiporus sulphureus* – Sulphur Polypore
26. *Meripilus giganteus* – Giant polypore
27. *Phytophthora* species Oak, Horsechestnut and Alder
28. *Piptoporus betulinus* – Birch polypore
29. *Polyporus squamosus* – Dryad's Saddle
30. *Rhytisma acerinum* – Black spot on Sycamore
31. *Taphrina* species causing 'witches brooms'
32. *Ustulina deusta*
33. *Xanthomonas populi* – Bacterial Canker of Poplar



## **7 Glossary and Acronyms**

### **ABC**

ABC Awards.

### **Accreditation**

The process through which the regulatory authorities (QCA) confirm that a qualification and the associated specification conform to the regulatory criteria.

### **Accreditation of Prior Learning (APL)**

The process of recognising a candidate's previous achievements or learning.

### **Assessment**

The process of making judgements about the extent to which a candidate's work meets the assessment criteria (requirements that must be met in order to achieve success, or a given grade) for a qualification or unit, or part of a unit.

### **Awarding Body**

An organisation or consortium that awards qualifications.

### **Basic Skills**

Basic Skills refers to the ability to read, write and speak English/Welsh and use mathematics at a level necessary to function and progress at work and in society in general.

### **Centre**

An organisation or consortium accountable to an awarding body for the assessment arrangements leading to a qualification or units.

### **Centre Approval**

A process through which a centre wishing to offer ABC's qualifications is confirmed as being able to maintain the required quality and consistency of assessment and comply with other expectations of the awarding body.

### **External Assessment**

A form of independent assessment where assessment tasks are set, and candidates' work assessed, by the awarding body.

### **External Moderator**

An individual appointed by the awarding body to ensure accurate and consistent standards of assessment, across centres and over time.

### **Independent Assessment**

Assessment of candidates' work that is carried out by assessors who do not have a vested interest in the outcome.

### **Internal Assessment**

Assessment where assessment tasks are set, and candidates' work assessed, wholly within the candidate's centre.

### **Internal Moderator**

An individual appointed by the centre to secure accurate and consistent standards of assessment, both between assessors operating within a centre and between centres offering the same award.

**Key Skills**

General skills that apply across occupational and academic fields and assist in improving learning and performance.

**Knowledge Requirements**

The part of the ABC qualification that the candidate needs to know.

**Learning and Skills Council (LSC)**

The body responsible for funding and planning education and training for over 16-year-olds in England.

**Learning Outcomes**

The part of the ABC qualification that the candidate needs to do.

**Level**

The level at which a qualification is positioned in the National Qualifications Framework.

**Moderation**

The process of checking that assessment standards have been applied correctly and consistently between assessors, between centres and over time, and making adjustments to results where required to compensate for any differences in standard that are encountered.

**National Occupational Standards (NOS)**

Statements which describe the outcomes of competent work in an occupational field.

**National Qualifications Framework (NQF)**

The framework used by the regulatory authorities to position qualifications in England, Wales and Northern Ireland.

**National Training Organisation (NTO)**

An organisation charged by the government with improving the future competitiveness of the UK by increasing the level of knowledge and skills of the workers in its sector.

**National Vocational Qualification (NVQ)**

NVQs are work-related, competence based qualifications that reflect the skills and knowledge needed to do a job effectively throughout the country. They represent the national standards recognised by employers.

**Qualifications and Curriculum Authority (QCA)**

Government-designed statutory organisation required to establish national standards for qualifications in England and secure consistent compliance with them (the regulatory authorities in Wales and Northern Ireland are ACCAC and CCEA respectively).

**Sector Skills Council (SSC)**

A body recognised by the regulatory authorities as responsible for formulating and reviewing standards of occupational competence for an employment sector.

**Scheme Approval**

A process through which a centre wishing to offer a particular qualification is confirmed as being able to maintain the required quality and consistency of assessment and has the correct resources, facilities and equipment specific to the qualification.

**Unit**

The smallest part of a qualification that is (generally) capable of certification in its own right.

**Vocationally Related Qualification (VRQ)**

VRQs are linked to NVQs but are different. They are designed to underpin much of the knowledge for the National Occupational Standards (NOS) and assist in the development of practical skills and do not have to be delivered in the workplace.