Institute for Apprenticeships & Technical Education

Agriculture, Environmental and Animal Care: Agriculture, land management and production

T Level outline content: draft version

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Contents

Introduction

Outline content

This outline content has been produced by T Level panels of employers, professional bodies and providers, and is based on the same standards as those used for apprenticeships. The outline content will form the basis of the specifications for T Level Technical Qualifications, which will be developed by awarding organisations for approval by the Institute for Apprenticeships and Technical Education. One awarding organisation will be appointed to develop and deliver each Technical Qualification following a procurement process.

Colleges and other education and training providers will decide how to structure the T Level courses they offer, based on the qualification specifications. This will enable them to deliver the study programme's mandatory components in the most effective way for students.

A T Level programme consists of a Technical Qualification, substantial industry placement, English and maths, and other occupation-specific requirements where essential for entry to skilled employment. This outline content relates solely to the Technical Qualification part of a T Level programme.

Further information about T Levels is available on the website of the Institute for Apprenticeships and Technical Education here: www.instituteforapprenticeships.org, and at www.education.gov.uk.

Agriculture, Environmental and Animal Care: Agriculture, land management and production pathway

Awarding organisations will need to ensure that students have an up-to-date knowledge of the legal and regulatory obligations relating to employment in the occupations relevant to the T Level and understand the practical implication of these on their work.

Maths, English and digital skills are set out in a separate annex. Awarding organisations should integrate these within the qualification so that they are applied in occupationally relevant contexts.

Core content

The core content relates to the whole route 'route core'. The core knowledge and understanding is assessed through an examination and core skills through a practical employer-set project.

The core knowledge and understanding focuses on the students' knowledge and understanding of contexts, concepts, theories and principles relevant to the T Level. This could include, where appropriate, assessment of knowledge and understanding relevant to the route and the pathway.

The employer-set project provides the opportunity to develop and apply a minimum range of core skills important for employability. The allocation of content to each type of assessment will need to be approved by the Institute for Apprenticeships and Technical Education.

Core knowledge and understanding across Agriculture, Environmental and Animal Care Route

Element	Content
Sustainability	Key requirements of environmental legislation • associated obligations for businesses, their employees and other stakeholders. Key government environmental policies and initiatives • the opportunities and risks they bring to agriculture, environmental and animal care sector • the associated environmental performance measure e.g. water and energy use. The concept of sustainable development • sustainable development goals at a macro (national and international) and micro (business) level • types of sustainable solutions to meet development goals including social, environmental, economic and human • concerns and expectations of key stakeholders. The concept of climate change and scientific views on causes and impacts • the impact of increased rainfall and higher temperatures upon environments, conservation practices, habitats, flora, fauna and water levels • policies and initiatives to manage these changes at national and local level. Waste management principles (e.g. recycle, reduce, reuse) • key requirements of associated legislation • types of materials that require specific actions (e.g. asbestos) • measures in place by the sector and organisation to meet requirements.

Biosecurity	Principles of biosecurity • factors influencing biosecurity e.g. international trade, new technologies • biosecurity risk factors in different types of agriculture, environmental and animal care situations • biosecurity measures including inspection, monitoring, regulation, passports, isolation and their importance in maintaining health production and service environments.
Working in the agriculture, environmental and animal care sector	Employment rights and responsibilities (e.g. union membership, working hours) of the employer and employee • expectations of professional conduct and behaviours in the workplace (including punctuality, cleanliness, respect for own and others work and work area, respect for the land, property and belongings of others (including animals) • typical activities that can lead to disciplinary and grievance procedures • how these expectations are met and demonstrated by employees. Principles of effective teamwork • how teams are developed, including the role of the team leader • team dynamics and how they are managed, and behaviours influenced • qualities of effective team members and team leaders and how these qualities are demonstrated • the importance of team work to team and project performance • techniques used to monitor and manage individual and team performance e.g. goal and objective setting, performance management reviews, providing constructive feedback • techniques used to manage team conflict (e.g. mediation) and when and how they should be applied.

Working in the agriculture, environmental and animal care sector (continued)	Progression opportunities which exist within the agriculture, environmental and animal care sector • the purpose of continuing professional development (CPD) and the benefits it brings to the individual and their employer • methods of personal and professional development (e.g. coaching, independent research) and the types of organisations that can provide this type of support, including professional bodies. • their suitability for achieving planned outcomes.
Ethics	Ethical principles (e.g. honesty, transparency, justice) • how these are used in codes of conduct, employment terms and conditions and workplace policies • how these are represented by ethical behaviours • how these are incorporated into business ethics • how these impact on business operations, including interaction with stakeholders and the supply chain.
Supply Chain	The supply chain • different types of organisations involved and their role • different ways in which the supply chain is sequenced and operates • implications of failing to meet supply chain demands • environmental impact of the supply chain including whole life cycle of a product • types of procurement (e.g. competitive bidding, direct purchase) and their suitability for different situations. Principles of stock management (including stock rotation, storage, conditions, monitoring stock levels, ordering stock, dealing with deliveries, maintaining records) • how they are applied in different types of business • implications to businesses of ineffective processes.

Business	The types of business organisations e.g. sole trader, partnership, limited company, not for profit • common business structures and hierarchies • the financial, legal and commercial implications of type of business • typical organisational policies and their relationship to legislation • types of business objectives and values associated with different business structures. The principles of enterprise skills e.g. risk taking, innovation, resilience • how they are applied to develop business growth and change including sales opportunities and diversification of the business • types of business risk (e.g. financial, reputational) and risk management methods that can be deployed. How businesses measure success (including Key Performance Indicators (KPIs), Service Level Agreements (SLAs), benchmarking, supply chain requirements) • the information used to determine if success measures are met • quality standards, quality control and quality assurance ○ their purpose, differences and application to organisations quality standards expected by internal and external stakeholders and associated quality assurance requirements e.g. audits. The principles of project management (including purpose and scope of the project, milestones and timescales, supply chain, people management, resources, budgeting).
Equality	Factors to consider (including equality legislation, cultural differences, religious needs) when working with people from diverse backgrounds and cultures • how to show empathy and respect to those from different backgrounds and cultures to our own • acceptable and unacceptable behaviours and language. Characteristics protected by equality legislation.

Communication	Different types of communication (including verbal, non-verbal and digital) • the formats used for the types of communication (e.g. business reports, emails, letters, websites) and associated business conventions • the types and value of images and visual aids to support written text and oral presentations • their suitability for different purposes and audiences • the importance of spoken language, body language and tone in communication and how each is used to convey different messages to different audiences for different purposes • the benefits and limitations of social media including risk of misuse, promoting the business.
Relationship Management	Principles of customer care (including first impressions, representing business and self, supporting customers, the difference between customer wants and needs, the importance of accurate knowledge, working to an expected timescale) • how these can be applied when dealing with different stakeholders, including internal customers • legal requirements (including legislation relating to consumer protection) when interacting with different types of customers and customer relationships including business to business (B2B) • typical procedures used to deal with customer disputes and complaints, including escalation to relevant individuals and departments • how to apply customer service principles and the benefits to the individual (e.g. increased motivation, positive feedback) and business (e.g. customer loyalty, customer confidence). Roles of different stakeholders including internal and external customers • their expectations • interrelationships between stakeholders.

Finance	The concept of profit • types of profit (including net and gross) and significance of each to business success • types of cost incurred by business (products, ancillary products, types of overheads, labour), their classifications (direct, indirect, fixed, variable) • measures used to reduce costs and implications of using these to profitability, reputation and quality • types of taxation (including payroll, business) • how costs and revenue are forecast • how profit is calculated.
Health and Safety	Key requirements of health and safety legislation e.g. for lone working, safe manual handling • the respective duties imposed on employees and employers • the importance of taking personal responsibility for health and safety of self and others • the techniques and methods used to comply with legislation e.g. use of Personal Protective Equipment (PPE), regular communication with lone workers. The purpose of risk assessments • typical structures and content • how they are developed and used • implications for poor development and application. Hazards and risks associated with working in the agriculture, environmental and animal care sector (e.g. working with hazardous materials, lone working) • typical control measures in place to minimise risks, including the types of PPE used, fatigue and stress management for lone workers. Procedures to follow when dealing with emergency situations e.g. spilt cleaning materials, slurry exposure, flooding.

Information and data	Key requirements of legislation relating to the security of information and data • types of information and data protected by legislation including client data, intellectual property • methods used by businesses to manage information and data including version control, access controls, indexing, cyber security.

Employer-set project

The employer-set project ensures students have the opportunity to combine core knowledge and skills to develop a substantial piece of work in response to an employer-set brief. The employer-set project forms part of the Technical Qualification and is a separate part of the T Level programme to the Industry Placement.

To ensure consistency in project scope and demand, awarding organisations will develop assessment objectives, which require students to:

- plan their approach to meeting the brief
- apply core knowledge and skills as appropriate
- select relevant techniques and resources to meet the brief
- use maths, English and digital skills as appropriate
- realise a project outcome and review how well the outcome meets the brief

The awarding organisation will work with a relevant employer or employers, to devise a set brief that:

- ensures a motivating starting point for students' projects, for example, a real-world problem to solve
- ensures students can generate evidence that covers the assessment objectives
- is manageable for providers to deliver
- is officially approved by the awarding organisation and employer

For Agriculture land management production, in achieving the assessment objectives and meeting the brief, students must demonstrate the following core skills:

- **Analysing**
    - e.g. identifying common features of data obtained on options to improve a business' environmental impact, classifying and organising data into types, discerning patterns.
- **Communicating**
    - e.g. using visual and oral methods to engage an audience with proposals for improving representation and diversity in the sector.
- **Critical thinking**
    - e.g. questioning information and data, evaluating pros and cons of the introduction of new machinery or plant into a business, taking out of the whole life cycle.

- **Decision making**
    - e.g. identifying likely impact of skills scarcity in the business and using evidence to substantiate conclusions.
- **Investigating**
    - e.g. developing search criteria/queries for secondary research and designing and carrying out tests for primary research into the environmental impact of a business.
- **Working in a team**
    - e.g. developing and implementing a communication plan for the introduction of a new lone working policy.

Occupational Specialist Content

Specialist content is structured into different occupational specialisms, which correspond to the apprenticeship standards listed on the relevant occupational map. Occupational specialisms ensure students develop the knowledge and skills necessary to achieve a level of competence needed to enter employment in the occupational specialism, and are organised around 'performance outcomes' that indicate what the student will be able to do, as a result of learning and applying the specified knowledge and skills.

There are some content areas that are included in both the Core and Occupational Specialism sections, this is intentional. Where in Core, it is because it is content that is applicable to all Agriculture, Environmental and Animal Care students, regardless of the occupational specialism. If the same content is also in the Occupational Specialism, it is because the knowledge and skills need to be developed within the context of the Performance Outcome. In the occupational specialism, it is therefore likely to require different content to reflect the Performance Outcome.

Occupational Specialist Content

Occupational Specialism: Floristry

Performance Outcome 1: Design complex floral work to meet client requirements for special events

Knowledge Specific to Performance Outcome	Skills
Defining customer requirements Demographics of the business market • factors that affect these e.g. new housing developments, cultural links • how they change over time • how these can affect design requirements including cultural differences. • techniques used to determine these including the use of open and closed questions, active listening. Differences between customer needs and wants • techniques used to determine these including the use of open and closed questions, active listening. **Communication** Methods of communication (including the use of images, electronic and digital forms and face to face) • techniques to be applied e.g. email, digital mood board • suitability for different types of customers and their design requirements. Types of digital software used to show designs in different environments.	Sketch complex floral work by hand. Use digital software to produce images. Estimate space available for designs. Plan the use of visual merchandising to display goods for a retail environment. Present design ideas orally to a customer. Make novel connections between ideas. Form ideas iteratively. Synthesise ideas. Close a sale. Overcome objections to a potential sale. Use open and closed question techniques to obtain information from a customer. Convey technical information to a non-technical audience in writing. Summarise information and ideas. Create written quotations. Calculate a selling price for a design. Interpret information and data to extract relevant costing information. Check understanding of others. Develop rapport with others.

The importance of tone / style when communicating with customers • how tone / style can be adapted for different situations e.g. to show empathy, to give congratulations, to engage with a businessperson. The purpose and contents of different types of records maintained throughout different stages in the design process. Strategies used to present technical information to non-technical and technical audiences including when and how to use technical language, using images rather than words. **Business** Key sales opportunities that exist across the year including Christmas, Valentine's Day, and other cultural opportunities within the business and industry • how these are used when planning complex designs. Techniques used for visual merchandising and displaying goods to maximise sales of design services. Techniques used to increase sales opportunities when designing floral work • the importance of balancing additional sales with customer needs and the impact of the final design. Sales techniques including developing rapport, establishing customer needs and wants, presenting product or service information, overcoming objections, closing the sale, follow up actions • resources that support the sales process e.g. use of mood boards,	Transcribe information and data onto customer records. Make a 2D representation of a 3D design. Represent information and data using mathematical diagrams.

business portfolios, media shoots, customer reviews • the use of resources to close a sale • typical products and services that add value to sales e.g. packaging, ancillary products. Application of stock management principles (including stock-rotation, storage conditions, monitoring stock levels, ordering stock, maintaining records) to developing designs • the implications of failing to apply these principles when designing complex floral work. How designs can be used to promote the business, including the use of social media, site visits with clients and in-house displays. Roles and responsibilities of different parts of the floristry supply chain • different ways the supply chain is sequenced from growers to customers • how the supply chain affects pricing, ordering requirements, delivery schedules • how floral materials are packaged and the implications these have for creating complex designs. Techniques used to minimise waste • how these are considered when designing complex floral work • implications to the business and customer of poor waste management. Sustainable principles that apply to the supply chain (including transportation, Fair Trade, storage, packaging)	

• how this can affect customer needs and wants from designs. Types of business aims and values and the relationship with the types of designs that can be produced • factors to consider when costing a design including installation and staging, floral materials, ancillary products, labour costs, intellectual property, taxation • how costs and profitability are used to create designs to meet specific budgets • process involved in calculating the selling price for a design. **Complex Designs** Flower symbolisms associated with different cultures, ethnic groups and their related events. Characteristics of the design schema and how they are applied in complex floristry designs including order category (symmetrical, asymmetrical), arrangement style (decorative, form-linear, vegetative), floral line direction (radial, parallel, free arrangement), placement of materials and point of origin. Characteristics of the elements and principles of design (including colour, form, texture, space, line, balance, contrast, dominance, harmony, rhythm, scale, proportion) • how elements and principles are applied in complex floral designs. Types and sources of inspiration including culture, botany, emotion, technique, economics	

• how these are used to develop designs • techniques used to show designs including the use of mood boards and sketching. Factors that affect designs including planned use (attached to a person, to be carried by a person or other, to be displayed, to be added to an installation) methods of packaging and wrapping, timescales, budget. Construction methods of complex designs (including hand tied, designs in a medium, different types of mediums, wired, glued) • their benefits and limitations • how they are considered when preparing designs • implications for assembly and cost. Techniques used to add individuality to designs e.g. plant manipulation, the use of ancillary products • the impact they have on the design including skills required for assembly and installation and additional costs to the customer. Design quality criteria • the methods used to evaluate the design against specification • techniques used to adapt design in response to client feedback Content of a design presentation including size, dimensions, quantity, construction methods, timings, transportation methods, packaging, skill levels required, staffing required, ancillary products and formats used.	

Maths techniques The four rules, percentages, area, volume and their application when designing and costing complex designs Difference between estimation and accurate measurement • units of measurement applied to designs • measurement techniques used to ensure accuracy in measurement is achieved, including the equipment to be used, • implications for poor measurement practice to the business and designs. Techniques for the 2D and 3D representation of designs.	

Performance Outcome 2: Coordinate the care and conditioning of fresh floral materials and plants

Knowledge Specific to Performance Outcome	Skills
Health and safety Key requirements of COSHH legislation and related codes of practice and their application to the care and conditioning of fresh floral materials and plants. Typical hazards (e.g. knives, chemicals, team members) associated with care and conditioning of fresh floral materials and plants • control measures used to minimise associated risks. Types of PPE for care and conditioning of fresh floral materials and plants • their purpose • implications for poor use. **Business** How stock management principles (stock-rotation, types of storage, monitoring stock levels, ordering stock, dealing with deliveries, maintaining records) are applied to the coordination of the care and conditioning of fresh floral materials, plants and conditioning materials. How stock management supports businesses to optimise saleability of fresh floral materials • the implications of failing to apply these principles when coordinating the care and conditioning of fresh floral materials and plants. Types of waste produced by florists through care and conditioning of fresh floral materials and plants	Identify fresh materials that require reviving. Revive fresh materials by shock treatment. Provide support for hollow stems. Position plants for optimised growth and development. Apply safety measures when carrying out conditioning tasks. Measure chemical resources (e.g. liquids, powders) for conditioning, for cleaning. Calculate resources required for a task, working with proportion. Remove packaging of fresh floral materials. Apply knife skills e.g. defoliate the stem, remove thorns. Remove guard petals minimising damage. Inspect floral materials for damage. Remove pollen from open flowers. Groom fresh floral materials and plants e.g. brush carnations open, apply leaf shine to foliage. Cut stems at 45-degree angles. Maintain a clean and tidy work area. Capture digital images of poor-quality products. Organise waste into types.

• how these are categorised • methods used to minimise waste when caring and conditioning fresh floral materials and plants • implications of poor waste management to the business and the environment. Types of records maintained in relation to care and conditioning of fresh floral materials and plants • their purpose and content • how they are maintained digitally. Information and data • the types of data collected by the business and methods used • how data is interpreted and presented • how data is used to plan for the care and conditioning of fresh floral materials and plants • implications to care and conditioning of fresh floral materials and plants of poor data collection and management. Different types of security measures in different floristry environments • their purpose • suitability for different situations • how they are operated. Routes of supply (including modes of transportation and storage) used for different suppliers and fresh floral materials and plants • expected quality standards of delivered products e.g. soil moisture of plants, packaging	Clean down tools and equipment after use. Measure with precision. Input, process, manipulate and interrogate sales data digitally. Organise data into usable forms. Interpret mathematical diagrams. Optimise work processes. Create and edit digital images. Convey technical instructions to team members. Demonstrate techniques to team members. Check understanding of others. Estimate time and resources. Allocate resources (including people, equipment, materials, time) to steps. Model appropriate behaviours. Make effective use of personal space. Demonstrate physical dexterity including precise and controlled movements, appropriate application of force and delicacy. Apply a logical approach to resolving issues.

• how that influences expectations for care and conditioning • typical requirements and procedures for reporting poor quality to the supplier. Sustainable principles (including transportation, growing methods, storage, packaging) and how these can affect care and conditioning of fresh floral materials and plants. **Coordination** Factors to consider (including equality legislation, importance of respect, acceptable and unacceptable behaviour and language) when working with people from diverse backgrounds and cultures and how to apply these to contribute to team success. Factors that affect decision-making when allocating and prioritising tasks including business aims, nature of business, skills, knowledge and experience of staff, sales trends, stock and deliveries, planned use for designs. The environmental requirements for staff involved in care and conditioning (e.g. ventilation, lighting, space) • how these need to be planned for when coordinating care and conditioning. Techniques used for coordinating care and conditioning tasks including developing procedures, prioritising tasks, allocating time and resources, sequencing, presenting information. Sources of information available to support care and conditioning of less common fresh floral materials and plants • how these are accessed efficiently	

• how these are interpreted efficiently. **Care and conditioning** Causes and symptoms of different types of pests and diseases • the techniques used to identify them • how they are controlled to prevent damage and spreading • the roles and responsibilities for reporting pests and diseases to the appropriate person. Activities involved in caring for and conditioning fresh floral materials and plants (including pest identification and removal, disease identification, trimming, grooming, feeding, revival, labelling) • techniques that are applied e.g. shock treatment, supporting hollow stems • their suitability for different flowers • how activities contribute to the saleability of fresh floral materials. Characteristics of fresh floral materials and plants and implications for maintaining stock and carrying out care and conditioning including • poisonous fresh floral materials and plants and those with irritants • characteristics of how fresh floral materials are harvested (e.g. by weight, length of stem, number of flower heads) • quality characteristics and how these are affected by growing method and planned designs • characteristics of different stem structures (including woody, semi-woody, hollow, soft, latex).	

Tools, equipment and materials required for care and conditioning of fresh floral materials and plants • their characteristics • their purpose • their use and operation • their suitability for different activities. Techniques used for presenting cared for and conditioned floral and non-floral materials to potential customers in retail and non-retail environments. **Plant biology** Binomial nomenclature of fresh floral materials and plants to include, family, genus, species, variety or cultivar, for a range of everyday and diverse fresh floral materials and plants • benefits, purpose and limitations of using and recognising both the common name and the binomial nomenclature of fresh floral materials and plants when communicating with others • the implication of any misunderstanding. Causes and effects of plants process including photosynthesis, transpiration, respiration, evaporation, osmosis, etiolation and tropisms • how this is used to determine care and conditioning of fresh floral materials and plants. Geographical implications of seasonality for fresh floral materials and plants.	

Performance Outcome 3: Assemble complex commercial flower, foliage and plant arrangements

Students must develop skills to assemble complex hand tied with spiral stems, complex designs in a medium, and complex wired or glued designs.

Students must develop skills to demonstrate that they can work with at least two of the following in each design:

- order categories
- arrangement styles
- floral line directions
- points of origin.

Students must develop skills to follow precise instructions in the assembly of complex designs and to develop their own procedures for the assembly of a given design.

Students must develop skills to create their own finishing as well as incorporating the finishes as required by a given design.

Knowledge Specific to Performance Outcome	**Skills**
Health and safety Typical hazards associated with assembling complex designs e.g. liquids on the floor, irritant materials • control measures used to minimise associated risks. Types of PPE available for assembling complex designs • their purpose • implications for poor use. **Business** The application of stock management principles (including stock-rotation, monitoring stock levels, maintaining records) to the assembly of complex designs • the implications of failing to apply these principles.	Manipulate fresh floral materials. Apply decorative finishes. Secure fresh materials in a design. Position fresh floral materials for assembly into a design. Provide support to fresh floral materials in a design. Manipulate wires to secure fresh floral materials in a design. Manipulate decorative materials (e.g. wire mesh) for assembly into a design. Bond floral materials in close order for the creation of shapes and profiles. Provide protection to assembled designs. Construct bows (e.g. figure of 8).

Types of waste produced by florists' assembly of complex designs • methods used to minimise waste • how methods are applied to assembly of complex designs. Types of records maintained in relation to assembly of complex designs • their purpose • formats used • how they are maintained digitally • legal requirements for maintenance of customer information and data. Routes of supply (including modes of transportation and storage) used for different suppliers and fresh floral materials and plants • expected quality standards • how that influences expectations for assembly techniques. **Assembly** The formats used to present designs, • the information included • how they are interpreted to assemble designs. Characteristics of the design schema and how they are applied in complex floristry designs including order category (symmetrical, asymmetrical), arrangement style (decorative, form-linear, vegetative), floral line direction (radial, parallel), placement of materials and point of origin • the importance of maintaining the characteristics included in a design	Apply glue to fresh floral materials and accessories. Tie fresh floral materials in assembled designs. Apply knife skills e.g. chamfering edges. Minimise waste. Apply packaging to designs. Spray designs to support longevity. Prepare the work area. Demonstrate physical dexterity including precise and controlled movements and delicacy. Identify discrete steps involved in completing a complex task. Sequence and prioritise steps. Manage own time to achieve objectives. Monitor own performance and standards.

• how to adapt designs to ensure characteristics are included. Characteristics of the elements and principles of design including colour, form, texture, space, line, balance, contrast, dominance, harmony, rhythm, scale, proportion • how they are applied in complex floral designs, • the importance of maintaining the characteristics included in a design, • how to adapt designs to ensure characteristics included. Factors that affect assembly including planned used (e.g. attached to a person, to be carried by a person or thing, to be displayed) methods of packaging, timescales, budget • how to ensure they are incorporated into the final assembled design. Construction methods of complex designs (including hand tied, designs in a medium, different types of mediums, wired, glued) • their benefits and limitations • how they are used to plan assembly of designs. Assembly techniques and how they are used to achieve complex designs including • manipulation and decorative techniques including but not limited to basing, bows, bundling, caging, edging with fresh, dried and artificial products, framing, knots, lacing, layering, pave, plaiting, pleating, rolling/cupping, sheltering, stacking, taping, terracing, threading, veiling, weaving, winding, wrapping, wedging	

• protection and finishing techniques including but not limited to backing, covering with ribbon • attaching techniques including but not limited to binding, clamping, gluing (hot, cold, spray), knotting, pinning, stapling, tying • wiring techniques including but not limited to cross, external, feathering, hook, internal, mount wiring (single leg, double leg support), semi-internal, stitching, (branching unit, ribbed unit, natural unit), pipping, sepal pinning • water retaining techniques including but not limited to the use of floral foam, moss, tubes/phials, water gels/pearls, wax, tape. Tools used in the assembly of complex designs e.g. knives, pliers • their characteristics • how they are used safely and effectively • their suitability for different construction techniques. Design quality criteria and the methods and process used to monitor and evaluate assembled designs • prior to assembly (including quality of selected fresh floral materials and plants) • during assembly • post assembly against design and order requirements • prior to delivery	

• techniques used to adapt final product to meet quality standards. **Care and conditioning of assembled complex designs** Symptoms of different types of pests and diseases • their effect on use of fresh floral materials and plants including when they can be used and when they should be discarded. Activities involved in caring for and conditioning fresh floral materials and other products within complex designs (including removal, replacement, watering, labelling) • techniques that are applied • their suitability for different designs. Characteristics of fresh floral materials and implications for carrying out care and conditioning when incorporating into designs and once they are in designs including • poisonous fresh floral materials and plants and those with irritant • quality characteristics and how they relate to planned designs • characteristics of different stem structures (including woody, semi-woody, hollow, soft, latex). Tools, equipment and materials required for care and conditioning of assembled designs • their characteristics • purpose • use and operation • suitability for different activities.	

Performance Outcome 4: Create free standing timber-based structures decorated with complex floral designs

Students must develop the skills to create the structure individually and in small groups (e.g.) pairs but the skills to attach the floral designs to a structure individually.

Knowledge Specific to Performance Outcome	Skills
Health and safety Typical hazards associated with creating installations of complex floral designs e.g. falling objects and building materials, working at height and control measures used to minimise associated risks. Types of PPE available for creating installations of complex floral designs, their purpose and implications for poor use. **Installations** Types of environments where installations of complex floral designs may be required • the associated internal and external surfaces (e.g. brick, grass, carpet) and their implications (including stability, health and safety, protection of the environment) for installations of free-standing structures to be decorated with complex floral work • environmental conditions including light (natural and artificial), ventilation, access to utilities, space (to create the installation), existing decorations and implications to the design of installations for complex designs (e.g. glare, air flow, access to power) • principles of heritage and conservation (e.g. listed building, traditional buildings) and implications for installation.	Assemble free standing timber structures. Cut timber-based materials to required measurements. Apply joining techniques to timber-based materials. Position, secure and fix timber-based materials. Smooth surfaces of timber-based materials e.g. sanding. Prepare timber-based materials for painting. Apply coatings to timber-based materials. Position, secure and fix floral designs to decorate free standing structures. Work collaboratively to prepare timber-based structure for transportation. Work collaboratively to produce a timber-based structure. Work collaboratively to load timber-based structure into transport. Work collaboratively to unload timber-based structure from transport. Operate hand-held and power tools.

Structural science (including forces, loads, materials) and how they impact on the design and installation of complex floral designs. Design principles (e.g. shape, texture, space), the design schema and principles and elements of design • how they are applied to installations (including to complement, to physically support) • how they can be used to add individuality to designs of installations • impact they have on the design including skills required for assembly and installation and additional costs to the customer. Conventions and symbols of technical drawings and how they are used to interpret design requirements. Installation equipment and machinery (including equipment for working at height, for measuring, cutting, assembling, fixing) • their characteristics and purposes • how they are operated and used effectively and safely • how they are maintained including cleaning and storage • their suitability for different design and installation requirements. Installation logistics • typical activities involved including off-site preparations, transporting equipment and materials (including fresh floral materials and plants, accessories, installation materials), preparation of the installation	Measure timber-based materials and environments. Apply protection to the environment where installation is to be located. Monitor quality of own and others performance. Provide constructive feedback to others on performance. Evaluate own performance. Use geometry rules and formulae to design free-standing structures. Exchange ideas with others. Assess health and safety risks. Apply safe handling and lifting techniques.

environment, installation, deconstruction and waste disposal • sequencing of activities • allocating resources (including time, people, materials, costs). Types of wood used for installation (e.g. plywood, timber, medium density fibreboard (MDF) • their properties, characteristics (e.g. colour, grain), suitability for different purposes and implications for design and installation • formats (e.g. sheet, board) and their implications for use and costing • sustainable products, the supply chain and licensing and implications for use. Types of timber-based and non-timber-based materials (including metals) and fixings (including) • their characteristics and material properties • how they can be used to enhance installations (e.g. to provide movement, colour or shape) • compatibility with installation design. Materials science (including material properties, chemical composition, potential for degradation and failure and potential effects of environmental conditions) and implications for installations of free-standing structures to be decorated with complex floral work. Assembly techniques including cutting, joining, fixing, incorporating floral designs	

• how they contribute to meeting design requirements • their suitability for use in different environments • equipment, machinery and materials required • how to deal with unexpected situations e.g. uneven surfaces. **Business** Application of stock management systems (including storage conditions, monitoring stock levels, ordering stock, maintaining records) to creating installations of complex floral designs • the implications of failing to apply these principles when creating installations of complex floral designs. How installations can be used to promote the business (including the use of social media) and positive and negative implications of using them for this purpose. Techniques used to minimise waste • how these are considered when creating installations of complex floral designs • implications to the business, the installation environment and customer of poor waste management. Different types of security measures available to support the creation and the installation of free-standing structures decorated with floral designs in different environment • their purpose	

• suitability for different situations. **Maths** Standard units of measurement and conversions between imperial and metric. Techniques used to accurately measure lines and areas and associated equipment required. Geometry (including angles, shapes, points on a plane, lines and curves, Pythagoras theorem) and its application to the design, production, assembly and fixing of installations.	